HVAC RESIDENTIAL ENERGY CODE NOTES

1. SEE SCHEDULES FOR EQUIPMENT TYPE, CAPACITY AND EFFICIENCY. ALL EQUIPMENT SHALL MEET MINIMUM EFFICIENCY PER WSREC
2. AT LEAST ONE THERMOSTAT SHALL BE PROVIDED FOR EACH SEPARATE HEATING AND COOLING SYSTEM. THERMOSTATS (GROUP R) SHALL BE 5-2 PROGRAMMABLE SCHEDULE WITH AT LEAST 2 SETBACK PERIODS PER DAY IN LIVING SPACES.
3. HEAT PUMPS WITH SUPPLEMENTARY ELECTRIC HEAT SHALL INCLUDE MICROPROCESSOR CONTROLS THAT MINIMIZE ELECTRIC HEAT USAGE DURING START-UP, SET-UP, AND DEFROST CONDITIONS. CONTROLS SHALL ANTICIPATE NEED FOR HEAT AND USE COMPRESSION HEATING AS THE FIRST STAGE. CONTROLS SHALL INDICATE WHEN ELECTRIC HEAT IS BEING USED THROUGH VISUAL MEANS. ELECTRIC HEAT SHALL NOT OPERATE ABOVE 40 F OUTSIDE AIR TEMPERATURE. AT FINAL INSPECTION THE AUXILIARY HEAT LOCK OUT CONTROL SHALL BE SET TO 35 DEG. F. OR LESS.
4. CONTINUOUSLY BURNING PILOT LIGHTS ARE NOT ALLOWED FOR GAS FIRED EQUIPMENT (EXCEPTION ANY FIREPLACE WITH ON-DEMAND, INTERMITTENT OR INTERRUPTED IGNITIION AS DEFINED IN ANSI Z21.20 IS NOT CONSIDERED CONTINUOUS.
5. HOT WATER BOILER CONTROL SHALL HAVE A SETBACK CONTROL THAT LOWERS THE BOILER WATER TEMPERATURE BASED ON THE OUTDOOR TEMPERATURE.
6. DUCTS AND AIR HANDLERS SHALL BE INSTALLED IN ACCORDANCE WITH SECTIONS R403.3.1 THROUGH R403.3.7.
7. DUCTS INSULATION SHALL MEET R403.3.1 AT MINIMUM AND SPECIFICATION SECTION 230700.
8. DUCT SEALING SHALL MEET R403.3.2.
9. DUCT TESTING SHALL MEET R403.3.3. DUCTS SHALL BE LEAK TESTED IN ACCORDANCE WITH WSU RX-33, USING MAXIMUM DUCT LEAKAGE RATES SPECIFIED. A WRITTEN REPORT OF THE RESULTS SHALL BE SIGNED BY THE PARTY CONDUCTING THE TEST AND PROVIDED TO THE CODE OFFICIAL. SEE EXCEPTIONS WITHIN CODE.
10. DUCT LEAKAGE SHALL MEET R403.3.4. ROUGH-IN TEST: 4 CFM/100 SQ. FT OF CONDITIONED FLOOR AREA AT 0.1" W.G. POST CONSTRUCTION TEST: 4 CFM PER 100 SQ. FT. OF CONDITIONED FLOOR AREA AT 0.1" W.G.
11. BUILDING CAVITIES SHALL MEET R403.3.5: BUILDING FRAMING CAVITITES SHALL NOT BE USED AS DUCTS OR PLENUMS. INSTALLATION OF DUCTS IN EXTERIOR WALLS, FLOORS OR CEILINGS SHALL NOT DISPLACE REQUIRED ENVELOPE INSULATION.
12. DUCT WITHIN CEILING INSULATION SHALL MEET R403.3.6. DUCTS FULLY OR PARTIALLY WITHIN CEILING INSULATION SHALL HAVE INSULATION R-VALUE NOT LESS THAN R-8 AND THE SUM OF THE CEILING INSULATION R-VALUE ABOVE AND BELOW THE DUCT SHALL NOT BE LESS THAN R-19, EXCLUDING THE R-VALUE OF THE DUCT INSULATION. SEE CODE EXCEPTIONS.
13. DUCT LOCATED IN CONDITIONED SPACE SHALL COMPLY WITH R403.3.7: ALL DUCTS CONSIDERED ARE LOCATED COMPLETELY WITHIN THE CONTINUOUS AIR BARRIER AND WITHIN THE BUILDING THERMAL ENVELOPE. ALL hvac SYSTEM COMPONENTS SHALL B EINSTALLED INSIDE THE CONDITIONED SPACE. FORCED AIR DUCTS (MAX 10 FT OF RETURN DUCTS AND 5 FT OF SUPPLY DUCTS) IS PERMITTED TO BE LOCATED OUTSIDE THE CONDITIONED SPACE, PROVIDED THEY ARE INSULATED TO A MINIMUM OF R-8. ALL DUCT JOINTS (TRANSVERSE AND LONGITUDINAL) MUST BE SEALED WITH MASTIC. fLEX DUCTS CANNOT CONTAIN SPLICES AND CONNECTIONS MUST BE MADE WITH NYLON STRAPS USING A PLASTIC STRAPPING TENSIONING TOOL.
14. MECHANICAL SYSTEM PIPING INSULATION SHALL MEET R403.4 AND SPECIFICATION SECTION 230700.
15. PROTECTION OF PIPING INSULATION SHALL MEET R403.4.1.
16. SERVICE HOT WATER SYSTEMS SHALL MEET SECTIONS R403.5.1 THRU R403.5.5.
17. MECHANICAL VENTILATION SHALL MEET R403.6. VENTILATION MUST MEET IRC OR IMC, AS APPLICABLE. OUTDOOR AIR INTAKES AND EXHAUSTS SHALL HAVE AUTOMATIC OR GRAVITY DAMPERS THAT CLOSE WHEN THE VENITLATION SYSTEM IS NOT OPERATING.
18. WHOLE HOUSE MECHANICAL VENTILATION SYSTEM FAN EFFICACY SHALL MEET R403.6.1/TABLE R403.6.1
19. EQUIPMENT SIZING AND EFFICIENCY RATING SHALL MEET R403.7. HVAC EQUIPMENT SHALL BE SIZED IN ACCORDANCE WITH ACCA MANUAL S OR ACCA MANUAL J OR OTHER APPROVED MEANS. THE OUTPUT CAPACITY OF HVAC EQUIPMENT SHALL NOT BE GREATER THAN THE SMALLEST AVAILABLE EQUIPMENT SIZE THAT EXCEEDS THE LOADS CALCULATED (INCLUDING SAFETY FACTOR).
20. ELECTRIC RESISTANCE ZONE HEATED UNIT SHALL BE LIMITED IN ALL DETACHED ONE-ANDTWO FAMILY DWELLING UNITS AND MULTIPLE SINGLE-FAMILY DWELLINGS (TOWNHOUSES) UP TO THREE STORIES IN HEIGHT ABOVE GRADE PLAN. A INVERTER DRIVEN DUCTLESS MINI-SPLIT HEAT PUMP IN THE LARGEST ZONE OF EACH DWELLING UNIT SHALL BE USED. TOTAL INSTALLED HEATING CAPACITY OF 2 KW PER DWELLING OR LESS.
21. SYSTEMS SERVING MULTIPLE DWELLING UNITS SHALL COMPLY WITH SECTIONS C403 AND C404 OF THE WSEC COMMERCIAL PROVISIONS.
22. PROVIDE A MEANS OF BALANCING EVERY AIR INLET AND OUTLET AND EVERY AIR OR WATER TERMINAL DEVICE.
22. ALL PIPE AND DUCT INSULATION SHALL BE LABELLED WITH ITS THICKNESS AND INSULATING VALUE (R OR K).

HVAC GENERAL NOTES

1. THESE PLANS ARE SCHEMATIC AND DO NOT SHOW EXACT ROUTING OR EVERY OFFSET, WHICH MAY BE REQUIRED. THE HVAC CONTRACTOR IS TO COORDINATE WITH ALL OTHER TRADES AND IS TO VERIFY ALL CLEARANCES BEFORE COMMENCING WORK.
2. MATERIALS, METHODS AND INSTALLATION SHALL COMPLY WITH THE PROVISIONS OF THE LATEST EDITION OF THE INTERNATIONAL MECHANICAL CODE, INTERNATIONAL BUILDING CODE, INTERNATIONAL FIRE CODE AND LOCAL CODES AND ORDINANCES.
3. DUCT CONSTRUCTION AND HANGING SHALL COMPLY WITH THE LATEST IMC AND WITH CURRENT SMACNA STANDARDS.
4. JOINTS OF DUCT SYSTEM SHALL BE SEALED WITH GASKETS OR LISTED MASTIC TYPE DUCT SEALANT.
5. DUCTS SHALL BE INSULATED AS INDICATED ON PLANS TO MEET THE REQUIREMENTS OF THE CURRENT INTERNATIONAL ENERGY CODE AND SPECIFICATION.
6. FLEXIBLE DUCTS SHALL ONLY BE USED WHERE SHOWN AND SHALL NOT EXCEED 6 FT IN LENGTH UNLESS NOTED OTHERWISE.
7. PROVIDE EARTHQUAKE RESTRAINT FOR HVAC EQUIPMENT IN ACCORDANCE WITH THE CURRENT IBC.
8. PIPING PENETRATIONS OF FIRE RATED WALLS OR FLOOR SHALL BE SLEEVED AND FIRE STOPPED WITH LISTED MATERIALS SO AS TO MAINTAIN THE INTEGRITY AND RATING OF THE FLOOR OR WALL.
9. PROVIDE RETURN DUCT SMOKE DETECTOR(S) FOR AUTOMATIC SHUT DOWN OF ALL HEATING OR COOLING EQUIPMENT DELIVERING IN EXCESS OF 2000 CFM IN ACCORDANCE WITH THE CURRENT INTERNATIONAL MECHANICAL CODE. POWER WIRING AND INTERLOCK WIRING WITH THE BUILDING FIRE ALARM SYSTEM IS BY THE ELECTRICAL CONTRACTOR.
10. HVAC EQUIPMENT, VALVES AND DAMPERS SHALL BE LOCATED IN EASILY ACCESSIBLE LOCATIONS, UNLESS SHOWN ON ARCHITECTURAL DRAWINGS. REQUIRED ACCESS PANELS SHALL BE PROVIDED BY THE HVAC CONTRACTOR AND INSTALLED BY THE GENERAL CONTRACTOR.
11. HVAC CONTRACTOR MUST COORDINATE WITH LIGHTING FIXTURES PRIOR TO DUCT AND PIPING INSTALLATION.

R406 FUEL AND ENERGY CREDITS

Table R406.2 Fuel Normalization Credits

System No.	Full Description	Select System Type	Fuel Normalization Credits (406.2)	Energy Credits (406.3)	Total Credits (406.2 & 406.3)
3	For heating system based on electric resistance only (either forced air or Zonal)	Electric Resistance Only	-1.0	5.5	4.5

Table R406.3 Energy Credits

Option No.	Category	Select Options	Energy Credits	Brief Description of Selected Options*
1	Efficient Building Envelope	Option 1.3	NA	U 0.28 Windows / R-38 floors or R-10 Fully insulated slab. Or 5% reduction in UA
2	Air Leakage Control and Efficient Ventilation	Option 2.2	1.5	2.0 ACH50 / Heat Recovery Ventilation min eff 65% / For R2, 0.25 cfm per ft2 at 50 Pa / HRV with min SHR eff of 0.65
3	High Efficiency HVAC		0.0	
4	High Efficiency HVAC Distribution System	Not Selected	0.0	-
5.1	Efficient Water Heating	Not Selected	0.0	-
5.2-5.6	Efficient Water Heating	Option 5.5	2.5	NEEA Tier 3 heat pump water heater
6	Renewable Electric Energy kWh	Not Selected	0.0	
7	Appliance Package	Option 7.1	1.5	Appliance Package
	Energy Credits		5.5	

*Refer to WSEC 2018 Table R406.3 for complete option descriptions and requirements

EQUIPMENT SCHEDULES

LOUVER SCHEDULE

MARK	MAKE	MODEL	WIDTH	HEIGHT	FREE AREA	MATERIAL	FINISH	NOTES:
L-1	GREENHECK	ESD-403	12"	12"	0.3	ALUMINUM	KYNAR	ALL

NOTES:
1. COLOR TO BE SELECTED BY ARCHITECT.
2. PROVIDE ALUMINUM BIRDSCREEN.
3. PROVIDE INSTALLATION HARDWARE AS REQUIRED.

RESIDENTIAL DIFFUSER AND GRILLE SCHEDULE

ITEM	MAKE	MODEL	DESCRIPTION	SIZE	MARK
SUPPLY REGISTER	LIFE BREATH	TECH-GRILLE	FULLY ADJUSTIBLE CENTER CONE, WHITE NON-CORROSIVE MATERIAL.	4"	SG-1
				5"	SG-2
RETURN GRILLE	TITUS	355FS	1/2" BLADE SPACING, 35 DEG DEFLECTION, BLADES PARALLEL TO SHORT DIMENSION, ALUMINUM, WHITE	6" X 6"	EG-1
RETURN GRILLE	TITUS	55FL	1/2" BLADE SPACING, 0 DEG DEFLECTION, BLADES PARALLEL TO SHORT DIMENSION, ALUMINUM, WHITE	8" X 8"	G-1

NOTES:
1. CEILING UNIT FRAME SHALL BE COMPATIBLE WITH CEILINGS; FLAT FRAME SURFACE MOUNT (TITUS BORDER TYPE 1) FOR DRYWALL CEILINGS AND WITH LAY-IN PANEL FOR EXPOSED GRID CEILINGS (TITUS BORDER TYPE 3). SEE ARCHITECTURAL PLANS FOR CEILING TYPES.
2. BEVELED DROP FACE DIFFUSERS (TITUS BORDER TYPE 6) ARE NOT ACCEPTABLE.
3. SIZE INDICATES DUCT COLLAR.

RESIDENTIAL UNIT - ENERGY RECOVERY VENTILATOR SCHEDULE

MARK	MAKE	MODEL	TYPE	SUPPLY CFM	SUPPLY ESP	EXHAUST CFM	EXHAUST ESP	HEAT EXCHANGER MATERIAL	HEAT EXCHANGER WINTER EFF.	ELECTRICAL WATTS	ELECTRICAL VOLT/PH	WGT. LBS	DBA	NOTES
ERV-1	BROAN	B160E65RT	INDOOR	100	0.4	100	0.4	POLYMER	65%	163	120/1	50	66	ALL

NOTES:
1. ECM MOTORS, DIRECT DRIVE
2. MERV 13 SUPPLY AND 8 EXHAUST FILTERS
3. WALL MOUNT BRACKETS
4. INTERNAL MOTORIZED SUPPLY AND EXHAUST DAMPERS
5. RECIRCULATION DEFROST MODEL
6. TOP PORT DUCT CONNECTIONS

A. 6 FT PLUG IN POWER CORD (120 V/1PH)
B. RUNS CONTINUOUSLY
C. CONTROL ON UNIT, NO REMOTE CONTROLS REQUIRED

FAN SCHEDULE

MARK	SERVES	MAKE	MODEL	TYPE	CFM	ESP INCH WC	RPM	BHP	HP (WATTS)	ELEC VOLT/PH	WT. LBS	MAX SONES (DBA)	NOTES:
EF-1	WATER SERVICE ROOM EXHAUST	GREENHECK	SQ-60-VG	INLINE	100	0.2	1725	--	1/15	115 / 1	40	3.0	ALL

NOTES:
1. ECM MOTOR WITH SPEED CONTROL
2. MOTORIZED CONTROL DAMPER, CLASS 1A
3. HANGING NEOPRENE ISOLATION

A. RUNS ON COOLING ONLY, LINE-VOLTAGE THERMOSTAT (T-STAT FURNISHED M.C., INSTALLED E.C.)

GENERAL CONTRACTOR NOTE

CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR MECHANICAL SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS & WALLS FOR INSPECTION BY DESIGN TEAM.

RESIDENTIAL VENTING CALCULATION - FLATS

UNIT TYPE	UNIT NUMBER	2018 IMC CODE REQUIREMENTS (TABLE 403.4.2) FLOOR AREA (ft^2)	VENTILATION (CFM)	SYSTEM TYPE	
2 Bed	A, D, E, H, I, L	724	35	DISTRIBUTED	BALANCED
3 Bed	B, C, F, G, J, K,	859	40	DISTRIBUTED	BALANCED

GENERAL NOTES ENERGY CODE

1. AIR BARRIER TESTING IS REQUIRED IN COMPLIANCE WITH C406.9
   a. SHALL NOT EXCEED 0.25 CFM/SQUARE FEET AT A PRESSURE DIFFERENTIAL OF 0.3 INCHES WATER GAUGE
   b. ASTM E779 OR E1827 COMPLIANCE REQUIRED
2. R406 REQUIREMENTS
   a. THIS PROJECT WILL PROVIDE A HEATING SYSTEM BASED ON ELECTRIC RESISTANCE ONLY PER TABLE R406.2, PER SYSTEM NUMBER 3
   b. THIS PROJECT WILL PROVIDE AN ENERGY EFFICIENT ENVELOPE PER R406.3, OPTION 1.3
   c. THIS PROJECT WILL PROVIDE AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION PER R406.3, OPTION 2.2
   d. THIS PROJECT WILL PROVIDE AN ENERGY EFFICIENT WATER HEATING PER R406.3, OPTION 5.5
   e. THIS PROJECT WILL PROVIDE AN ENERGYSTAR APPLIANCE PACKAGE PER R406.3, OPTION 7.1

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS
13317 NE 133rd St., Kirkland, WA 98034

BUILDING 24
BID SET

DANA AMBER FOWLES STATE OF WASHINGTON 0041009 REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

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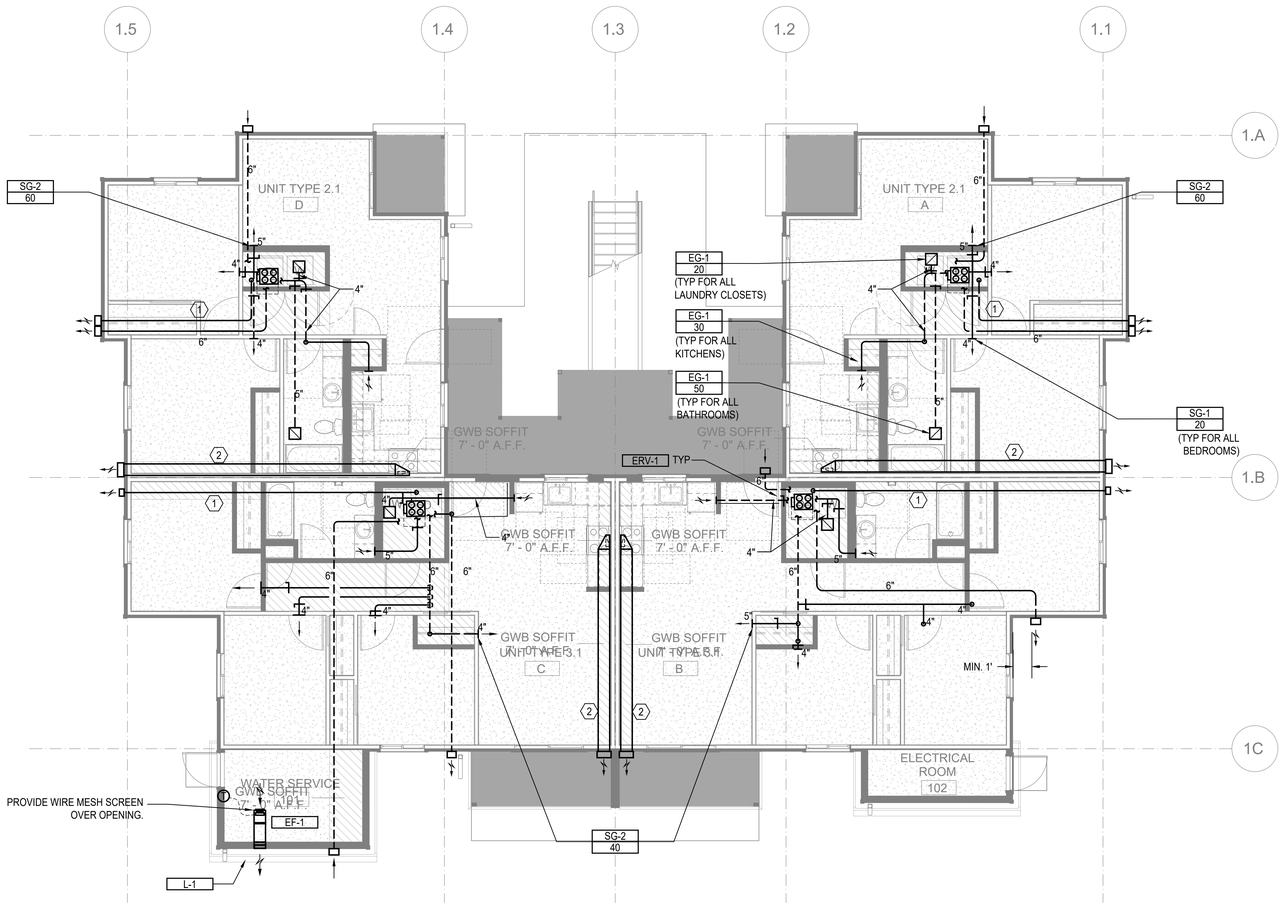
NOTES AND SCHEDULES

PERMIT #
DRAWN AJ, JL, PH, BF, KS
CHECKED DF
ISSUE DATE 4/14/2023
JOB NO. 22016
SHEET NO.:
M24-002

10/7/2021 7:33:34 AM



FLOOR PLAN - BUILDING 24 - LEVEL 1

SCALE: 3/16"=1'-0"

FLAG NOTES (X):

1. 4" DRYER EXHAUST DUCT. CONFIRM IN FIELD LENGTH OF DUCT DOES NOT EXCEED DRYER MANUFACTURE INSTALLATION LENGTH.
2. 12" X 4" RECTANGULAR DUCT.

LINE TYPES:

1. DASHED LINE TYPE REFERS TO DUCT RUNS IN THE JOIST - - - - - -

GENERAL NOTES:

1. ALL DRYER EXHAUST DUCT LENGTHS SHALL BE CONFIRMED TO COMPLY WITH DRYER MANUFACTURE INSTALLATION REQUIREMENTS PRIOR TO INSTALLATION. PAY SPECIAL ATTENTION TO EQUIVALENT AND TOTAL DUCT LENGTH. BRING TO THE ATTENTION OF THE ENGINEER IF FIELD CONDITIONS DO NOT MEET MANUFACTURE REQUIREMENTS.
2. EXHAUST DUCT(S) FROM ENERGY RECOVERY VENTILATOR(S) TO THE EXTERIOR TERMINATION MUST HAVE A MINIMUM CONTINUOUS INSULATION OF 1-1/2" R-8 FOR THE ENTIRE DUCT RUN.
3. OUTSIDE AIR DUCT(S) FROM THE ENERGY RECOVERY VENTILATOR(S) TO THE EXTERIOR TERMINATION MUST HAVE A MINIMUM CONTINUOUS INSULATION OF 1-1/2" R-8 FOR THE ENTIRE DUCT RUN.
4. DRYER EXHAUST TERMINATION SHALL BE BY UNIT MANUFACTURE WALL CAP. WALL CAP TO BE PAINTED BY GENERAL CONTRACTOR, ARCHITECT TO SELECT COLOR.
5. RANGE HOOD TERMINATION SHALL BE MANUFACTURE WALL CAP OR EQUIVALENT BROAN 643 ROUND CAP/WC638 RECTANGULAR CAP. WALL CAP TO BE PAINTED BY GENERAL CONTRACTOR, ARCHITECT TO SELECT COLOR.
6. ALL EXHAUST TERMINATIONS SHALL MEET THE CODE CLEARANCE REQUIREMENTS. NAMELY, EXHAUST MUST BE 10 FEET FROM A MECHANICAL AIR INTAKE, 3 FEET FROM AN OPERABLE OPENING INTO THE BUILDING.
7. DUCTS ROUTED WITHIN JOISTS SHALL BE DONE PER ARCHITECTURAL DETAILS. THIS IS A CODE REQUIREMENT.
8. ALL SUPPLY AND EXHAUST OUTLETS/INLETS SHALL HAVE A MEANS OF BALANCING THE AIRFLOW RATE; ACCESS SHALL BE MAINTAINED FOR BALANCING OUTLETS.
9. ERV-1 SHALL USE BROAN WALL CAP MODEL 641 FOR OUTSIDE EXHAUST AND BROAN WALL CAP MODEL 641FA FOR OUTSIDE INTAKE. PAINTED BY G.C.
10. ERV-2 SHALL USE BROAN WALL CAP MODEL 643 FOR OUTSIDE EXHAUST AND BROAN WALL CAP MODEL 643FA FOR OUTSIDE INTAKE. PAINTED BY G.C.

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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BUILDING 24

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DANA AMBER COLE
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REVISIONS / NOTES

NO	DATE	DESCRIPTION

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TITLE

PLAN - LEVEL 1

PERMIT #	
DRAWN	AJ, JL, PH, BF, KS
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ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

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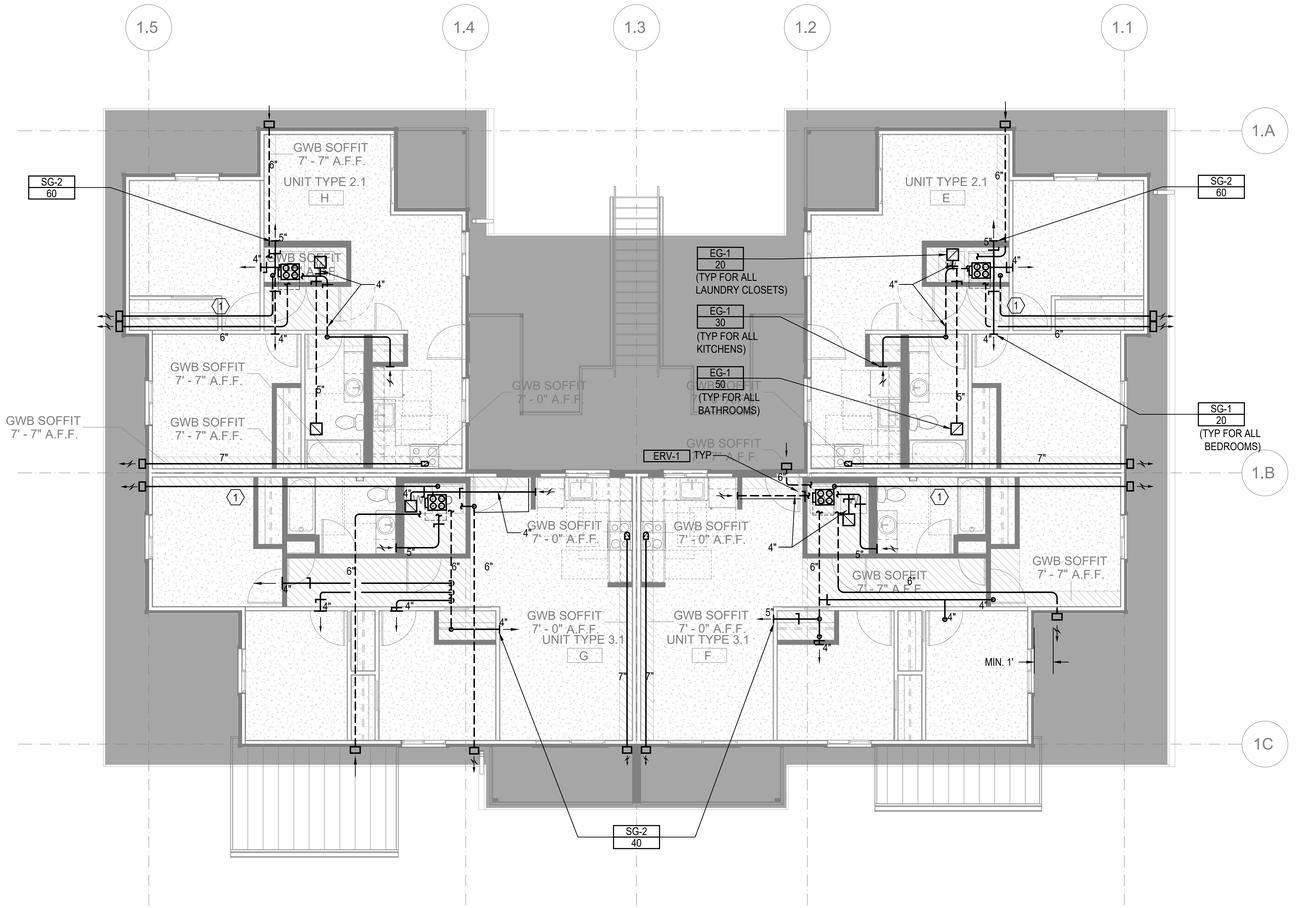

FLOOR PLAN - BUILDING 24 - LEVEL 2

SCALE: 3/16"=1'-0"

FLAG NOTES (X):

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2. 12" X 4" RECTANGULAR DUCT.

LINE TYPES:

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PLAN - LEVEL 2

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JOB NO.	22016
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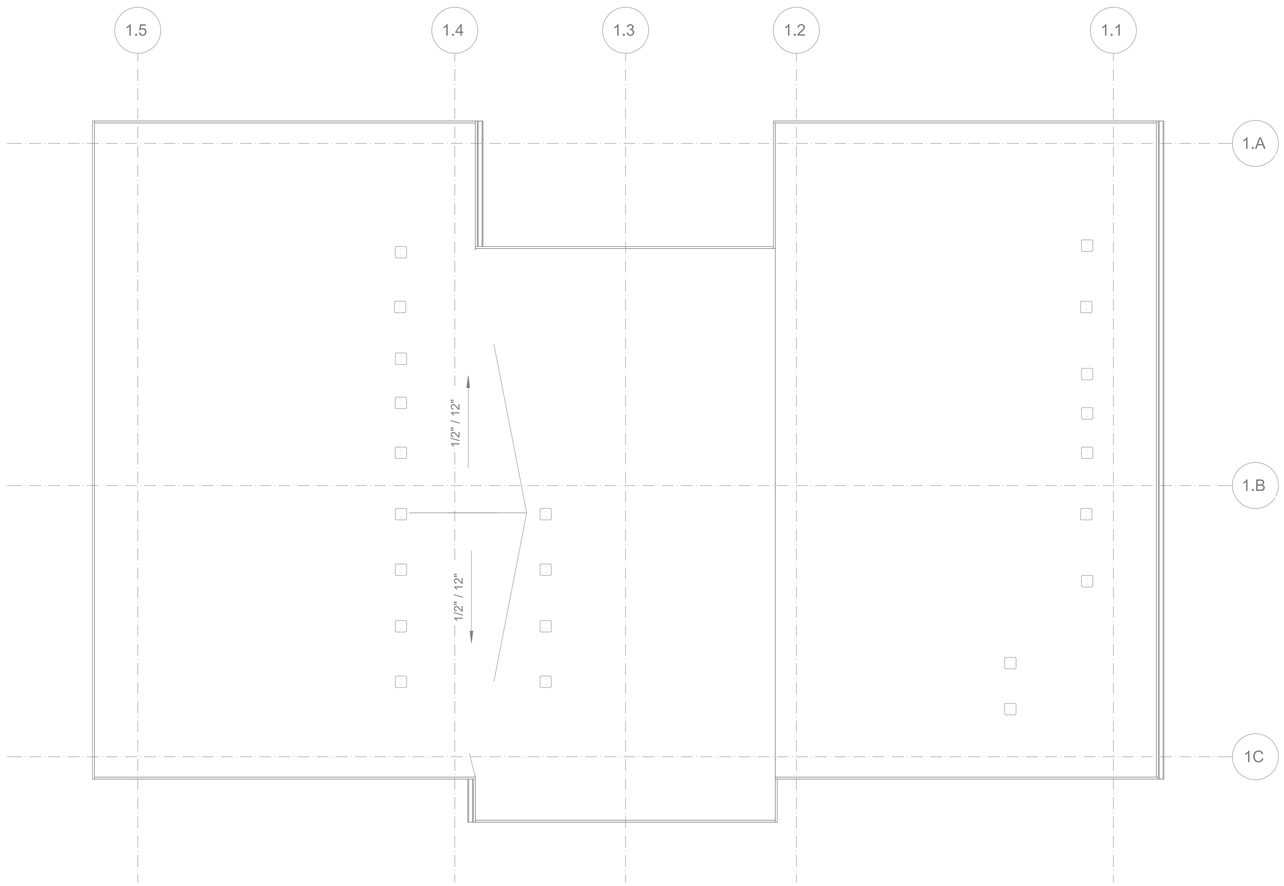

FLOOR PLAN - BUILDING 24 - ROOF - FOR REFERENCE ONLY

SCALE: 3/16"=1'-0"

FLAG NOTES (X):

LINE TYPES:

GENERAL NOTES:

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
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8. DUCT SEALING SHALL MEET R403.3.2.
9. DUCT TESTING SHALL MEET R403.3.3. DUCTS SHALL BE LEAK TESTED IN ACCORDANCE WITH WSU RX-33, USING MAXIMUM DUCT LEAKAGE RATES SPECIFIED. A WRITTEN REPORT OF THE RESULTS SHALL BE SIGNED BY THE PARTY CONDUCTING THE TEST AND PROVIDED TO THE CODE OFFICIAL. SEE EXCEPTIONS WITHIN CODE.
10. DUCT LEAKAGE SHALL MEET R403.3.4. ROUGH-IN TEST: 4 CFM/100 SQ. FT OF CONDITIONED FLOOR AREA AT 0.1" W.G. POST CONSTRUCTION TEST: 4 CFM PER 100 SQ. FT. OF CONDITIONED FLOOR AREA AT 0.1" W.G.
11. BUILDING CAVITIES SHALL MEET R403.3.5: BUILDING FRAMING CAVITITES SHALL NOT BE USED AS DUCTS OR PLENUMS. INSTALLATION OF DUCTS IN EXTERIOR WALLS, FLOORS OR CEILINGS SHALL NOT DISPLACE REQUIRED ENVELOPE INSULATION.
12. DUCT WITHIN CEILING INSULATION SHALL MEET R403.3.6. DUCTS FULLY OR PARTIALLY WITHIN CEILING INSULATION SHALL HAVE INSULATION R-VALUE NOT LESS THAN R-8 AND THE SUM OF THE CEILING INSULATION R-VALUE ABOVE AND BELOW THE DUCT SHALL NOT BE LESS THAN R-19, EXCLUDING THE R-VALUE OF THE DUCT INSULATION. SEE CODE EXCEPTIONS.
13. DUCT LOCATED IN CONDITIONED SPACE SHALL COMPLY WITH R403.3.7: ALL DUCTS CONSIDERED ARE LOCATED COMPLETELY WITHIN THE CONTINUOUS AIR BARRIER AND WITHIN THE BUILDING THERMAL ENVELOPE. ALL hvac SYSTEM COMPONENTS SHALL B EINSTALLED INSIDE THE CONDITIONED SPACE. FORCED AIR DUCTS (MAX 10 FT OF RETURN DUCTS AND 5 FT OF SUPPLY DUCTS) IS PERMITTED TO BE LOCATED OUTSIDE THE CONDITIONED SPACE, PROVIDED THEY ARE INSULATED TO A MINIMUM OF R-8. ALL DUCT JOINTS (TRANSVERSE AND LONGITUDINAL) MUST BE SEALED WITH MASTIC. fLEX DUCTS CANNOT CONTAIN SPLICES AND CONNECTIONS MUST BE MADE WITH NYLON STRAPS USING A PLASTIC STRAPPING TENSIONING TOOL.
14. MECHANICAL SYSTEM PIPING INSULATION SHALL MEET R403.4 AND SPECIFICATION SECTION 230700.
15. PROTECTION OF PIPING INSULATION SHALL MEET R403.4.1.
16. SERVICE HOT WATER SYSTEMS SHALL MEET SECTIONS R403.5.1 THRU R403.5.5.
17. MECHANICAL VENTILATION SHALL MEET R403.6. VENTILATION MUST MEET IRC OR IMC, AS APPLICABLE. OUTDOOR AIR INTAKES AND EXHAUSTS SHALL HAVE AUTOMATIC OR GRAVITY DAMPERS THAT CLOSE WHEN THE VENITLATION SYSTEM IS NOT OPERATING.
18. WHOLE HOUSE MECHANICAL VENTILATION SYSTEM FAN EFFICACY SHALL MEET R403.6.1/TABLE R403.6.1
19. EQUIPMENT SIZING AND EFFICIENCY RATING SHALL MEET R403.7. HVAC EQUIPMENT SHALL BE SIZED IN ACCORDANCE WITH ACCA MANUAL S OR ACCA MANUAL J OR OTHER APPROVED MEANS. THE OUTPUT CAPACITY OF HVAC EQUIPMENT SHALL NOT BE GREATER THAN THE SMALLEST AVAILABLE EQUIPMENT SIZE THAT EXCEEDS THE LOADS CALCULATED (INCLUDING SAFETY FACTOR).
20. ELECTRIC RESISTANCE ZONE HEATED UNIT SHALL BE LIMITED IN ALL DETACHED ONE-ANDTWO FAMILY DWELLING UNITS AND MULTIPLE SINGLE-FAMILY DWELLINGS (TOWNHOUSES) UP TO THREE STORIES IN HEIGHT ABOVE GRADE PLAN. A INVERTER DRIVEN DUCTLESS MINI-SPLIT HEAT PUMP IN THE LARGEST ZONE OF EACH DWELLING UNIT SHALL BE USED. TOTAL INSTALLED HEATING CAPACITY OF 2 KW PER DWELLING OR LESS.
21. SYSTEMS SERVING MULTIPLE DWELLING UNITS SHALL COMPLY WITH SECTIONS C403 AND C404 OF THE WSEC COMMERCIAL PROVISIONS.
22. PROVIDE A MEANS OF BALANCING EVERY AIR INLET AND OUTLET AND EVERY AIR OR WATER TERMINAL DEVICE.
22. ALL PIPE AND DUCT INSULATION SHALL BE LABELLED WITH ITS THICKNESS AND INSULATING VALUE (R OR K).

HVAC GENERAL NOTES

1. THESE PLANS ARE SCHEMATIC AND DO NOT SHOW EXACT ROUTING OR EVERY OFFSET, WHICH MAY BE REQUIRED. THE HVAC CONTRACTOR IS TO COORDINATE WITH ALL OTHER TRADES AND IS TO VERIFY ALL CLEARANCES BEFORE COMMENCING WORK.
2. MATERIALS, METHODS AND INSTALLATION SHALL COMPLY WITH THE PROVISIONS OF THE LATEST EDITION OF THE INTERNATIONAL MECHANICAL CODE, INTERNATIONAL BUILDING CODE, INTERNATIONAL FIRE CODE AND LOCAL CODES AND ORDINANCES.
3. DUCT CONSTRUCTION AND HANGING SHALL COMPLY WITH THE LATEST IMC AND WITH CURRENT SMACNA STANDARDS.
4. JOINTS OF DUCT SYSTEM SHALL BE SEALED WITH GASKETS OR LISTED MASTIC TYPE DUCT SEALANT.
5. DUCTS SHALL BE INSULATED AS INDICATED ON PLANS TO MEET THE REQUIREMENTS OF THE CURRENT INTERNATIONAL ENERGY CODE AND SPECIFICATION.
6. FLEXIBLE DUCTS SHALL ONLY BE USED WHERE SHOWN AND SHALL NOT EXCEED 6 FT IN LENGTH UNLESS NOTED OTHERWISE.
7. PROVIDE EARTHQUAKE RESTRAINT FOR HVAC EQUIPMENT IN ACCORDANCE WITH THE CURRENT IBC.
8. PIPING PENETRATIONS OF FIRE RATED WALLS OR FLOOR SHALL BE SLEEVED AND FIRE STOPPED WITH LISTED MATERIALS SO AS TO MAINTAIN THE INTEGRITY AND RATING OF THE FLOOR OR WALL.
9. PROVIDE RETURN DUCT SMOKE DETECTOR(S) FOR AUTOMATIC SHUT DOWN OF ALL HEATING OR COOLING EQUIPMENT DELIVERING IN EXCESS OF 2000 CFM IN ACCORDANCE WITH THE CURRENT INTERNATIONAL MECHANICAL CODE. POWER WIRING AND INTERLOCK WIRING WITH THE BUILDING FIRE ALARM SYSTEM IS BY THE ELECTRICAL CONTRACTOR.
10. HVAC EQUIPMENT, VALVES AND DAMPERS SHALL BE LOCATED IN EASILY ACCESSIBLE LOCATIONS, UNLESS SHOWN ON ARCHITECTURAL DRAWINGS. REQUIRED ACCESS PANELS SHALL BE PROVIDED BY THE HVAC CONTRACTOR AND INSTALLED BY THE GENERAL CONTRACTOR.
11. HVAC CONTRACTOR MUST COORDINATE WITH LIGHTING FIXTURES PRIOR TO DUCT AND PIPING INSTALLATION.

R406 FUEL AND ENERGY CREDITS

Table R406.2 Fuel Normalization Credits

System No.	Full Description	Select System Type	Fuel Normalization Credits (406.2)	Energy Credits (406.3)	Total Credits (406.2 & 406.3)
3	For heating system based on electric resistance only (either forced air or Zonal)	Electric Resistance Only	-1.0	5.5	4.5

Table R406.3 Energy Credits

Option No.	Category	Select Options	Energy Credits	Brief Description of Selected Options*
1	Efficient Building Envelope	Option 1.3	NA	U 0.28 Windows / R-38 floors or R-10 Fully insulated slab. Or 5% reduction in UA
2	Air Leakage Control and Efficient Ventilation	Option 2.2	1.5	2.0 ACH50 / Heat Recovery Ventilation min eff 65% / For R2, 0.25 cfm per ft2 at 50 Pa / HRV with min SHR eff of 0.65
3	High Efficiency HVAC		0.0	
4	High Efficiency HVAC Distribution System	Not Selected	0.0	-
5.1	Efficient Water Heating	Not Selected	0.0	-
5.2-5.6	Efficient Water Heating	Option 5.5	2.5	NEEA Tier 3 heat pump water heater
6	Renewable Electric Energy kWh	Not Selected	0.0	
7	Appliance Package	Option 7.1	1.5	Appliance Package
	Energy Credits		5.5	

*Refer to WSEC 2018 Table R406.3 for complete option descriptions and requirements

EQUIPMENT SCHEDULES

LOUVER SCHEDULE

MARK	MAKE	MODEL	WIDTH	HEIGHT	FREE AREA	MATERIAL	FINISH	NOTES:
L-1	GREENHECK	ESD-403	12"	12"	0.3	ALUMINUM	KYNAR	ALL

NOTES:
1. COLOR TO BE SELECTED BY ARCHITECT.
2. PROVIDE ALUMINUM BIRDSCREEN.
3. PROVIDE INSTALLATION HARDWARE AS REQUIRED.

RESIDENTIAL DIFFUSER AND GRILLE SCHEDULE

ITEM	MAKE	MODEL	DESCRIPTION	SIZE	MARK
SUPPLY REGISTER	LIFE BREATH	TECH-GRILLE	FULLY ADJUSTIBLE CENTER CONE, WHITE NON-CORROSIVE MATERIAL.	4"	SG-1
				5"	SG-2
RETURN GRILLE	TITUS	355FS	1/2" BLADE SPACING, 35 DEG DEFLECTION, BLADES PARALLEL TO SHORT DIMENSION, ALUMINUM, WHITE	6" X 6"	EG-1
RETURN GRILLE	TITUS	55FL	1/2" BLADE SPACING, 0 DEG DEFLECTION, BLADES PARALLEL TO SHORT DIMENSION, ALUMINUM, WHITE	8" X 8"	G-1

NOTES:
1. CEILING UNIT FRAME SHALL BE COMPATIBLE WITH CEILINGS; FLAT FRAME SURFACE MOUNT (TITUS BORDER TYPE 1) FOR DRYWALL CEILINGS AND WITH LAY-IN PANEL FOR EXPOSED GRID CEILINGS (TITUS BORDER TYPE 3). SEE ARCHITECTURAL PLANS FOR CEILING TYPES.
2. BEVELED DROP FACE DIFFUSERS (TITUS BORDER TYPE 6) ARE NOT ACCEPTABLE.
3. SIZE INDICATES DUCT COLLAR.

RESIDENTIAL UNIT - ENERGY RECOVERY VENTILATOR SCHEDULE

MARK	MAKE	MODEL	TYPE	SUPPLY CFM	SUPPLY ESP	EXHAUST CFM	EXHAUST ESP	HEAT EXCHANGER MATERIAL	HEAT EXCHANGER WINTER EFF.	ELECTRICAL WATTS	ELECTRICAL VOLT/PH	WGT. LBS	DBA	NOTES
ERV-1	BROAN	B160E65RT	INDOOR	100	0.4	100	0.4	POLYMER	65%	163	120/1	50	66	ALL

NOTES:
1. ECM MOTORS, DIRECT DRIVE
2. MERV 13 SUPPLY AND 8 EXHAUST FILTERS
3. WALL MOUNT BRACKETS
4. INTERNAL MOTORIZED SUPPLY AND EXHAUST DAMPERS
5. RECIRCULATION DEFROST MODEL
6. TOP PORT DUCT CONNECTIONS

A. 6 FT PLUG IN POWER CORD (120 V/1PH)
B. RUNS CONTINUOUSLY
C. CONTROL ON UNIT, NO REMOTE CONTROLS REQUIRED

FAN SCHEDULE

MARK	SERVES	MAKE	MODEL	TYPE	CFM	ESP INCH WC	RPM	BHP	HP (WATTS)	ELEC VOLT/PH	WT. LBS	MAX SONES (DBA)	NOTES:
EF-1	WATER SERVICE ROOM EXHAUST	GREENHECK	SQ-60-VG	INLINE	100	0.2	1725	--	1/15	115 / 1	40	3.0	ALL

NOTES:
1. ECM MOTOR WITH SPEED CONTROL
2. MOTORIZED CONTROL DAMPER, CLASS 1A
3. HANGING NEOPRENE ISOLATION

A. RUNS ON COOLING ONLY, LINE-VOLTAGE THERMOSTAT (T-STAT FURNISHED M.C., INSTALLED E.C.)

GENERAL CONTRACTOR NOTE

CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR MECHANICAL SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS & WALLS FOR INSPECTION BY DESIGN TEAM.

RESIDENTIAL VENTING CALCULATION - FLATS

UNIT TYPE	UNIT NUMBER	2018 IMC CODE REQUIREMENTS (TABLE 403.4.2) FLOOR AREA (ft^2)	VENTILATION (CFM)	SYSTEM TYPE	
2 Bed	A, D, E, H, I, L	724	35	DISTRIBUTED	BALANCED
3 Bed	B, C, F, G, J, K,	859	40	DISTRIBUTED	BALANCED

GENERAL NOTES ENERGY CODE

1. AIR BARRIER TESTING IS REQUIRED IN COMPLIANCE WITH C406.9
   a. SHALL NOT EXCEED 0.25 CFM/SQUARE FEET AT A PRESSURE DIFFERENTIAL OF 0.3 INCHES WATER GAUGE
   b. ASTM E779 OR E1827 COMPLIANCE REQUIRED
2. R406 REQUIREMENTS
   a. THIS PROJECT WILL PROVIDE A HEATING SYSTEM BASED ON ELECTRIC RESISTANCE ONLY PER TABLE R406.2, PER SYSTEM NUMBER 3
   b. THIS PROJECT WILL PROVIDE AN ENERGY EFFICIENT ENVELOPE PER R406.3, OPTION 1.3
   c. THIS PROJECT WILL PROVIDE AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION PER R406.3, OPTION 2.2
   d. THIS PROJECT WILL PROVIDE AN ENERGY EFFICIENT WATER HEATING PER R406.3, OPTION 5.5
   e. THIS PROJECT WILL PROVIDE AN ENERGYSTAR APPLIANCE PACKAGE PER R406.3, OPTION 7.1

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS
13317 NE 133rd St., Kirkland, WA 98034

BUILDING 25
BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE
NOTES AND SCHEDULES

PERMIT #
DRAWN AJ, JL, PH, BF, KS
CHECKED DF
ISSUE DATE 4/14/2023
JOB NO. 22016
SHEET NO.:
M25-002

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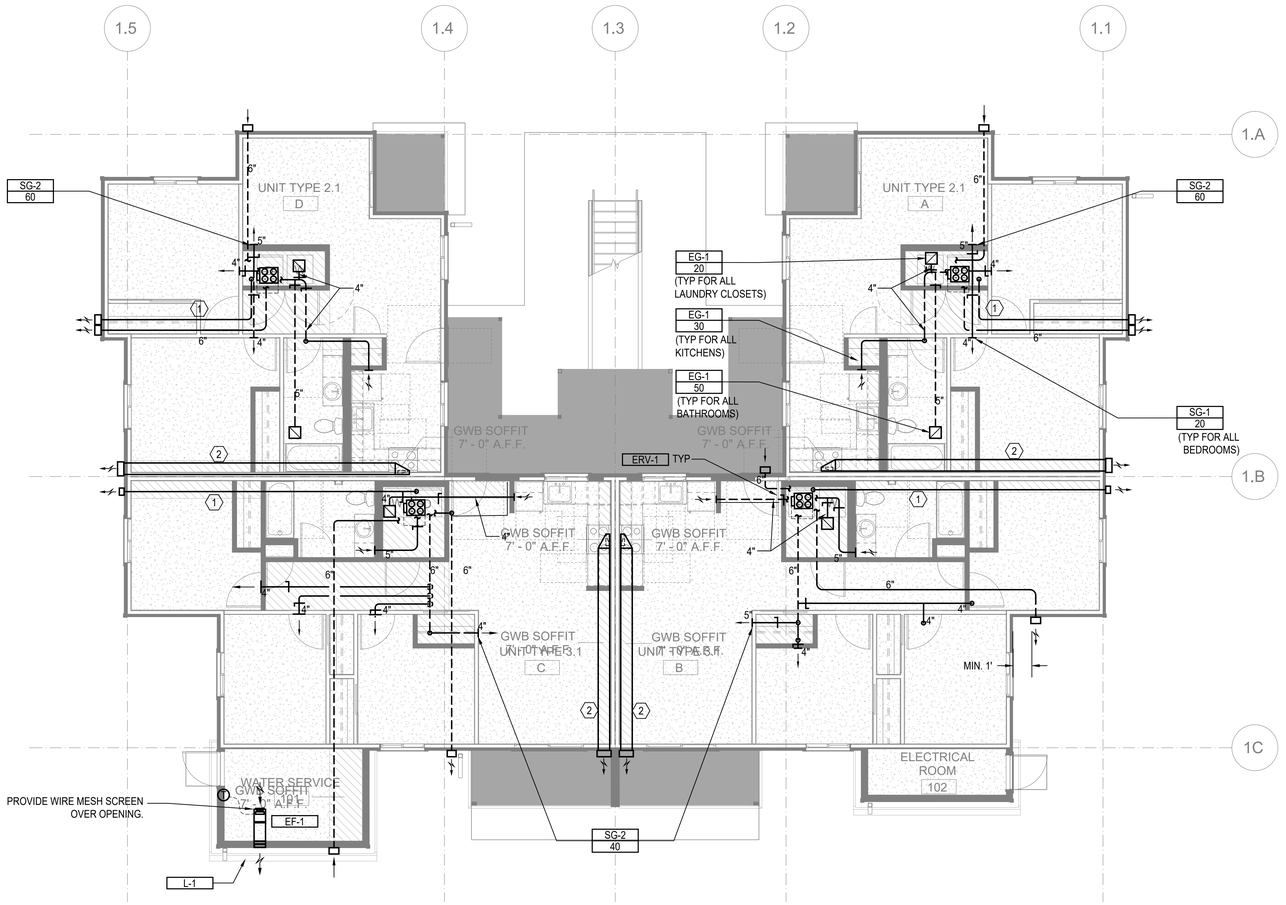

FLOOR PLAN - BUILDING 25 - LEVEL 1

SCALE: 3/16"=1'-0"

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FLAG NOTES (X):

1. 4" DRYER EXHAUST DUCT. CONFIRM IN FIELD LENGTH OF DUCT DOES NOT EXCEED DRYER MANUFACTURE INSTALLATION LENGTH.
2. 12" X 4" RECTANGULAR DUCT.

LINE TYPES:

1. DASHED LINE TYPE REFERS TO DUCT RUNS IN THE JOIST - - - - - -

GENERAL NOTES:

1. ALL DRYER EXHAUST DUCT LENGTHS SHALL BE CONFIRMED TO COMPLY WITH DRYER MANUFACTURE INSTALLATION REQUIREMENTS PRIOR TO INSTALLATION. PAY SPECIAL ATTENTION TO EQUIVALENT AND TOTAL DUCT LENGTH. BRING TO THE ATTENTION OF THE ENGINEER IF FIELD CONDITIONS DO NOT MEET MANUFACTURE REQUIREMENTS.
2. EXHAUST DUCT(S) FROM ENERGY RECOVERY VENTILATOR(S) TO THE EXTERIOR TERMINATION MUST HAVE A MINIMUM CONTINUOUS INSULATION OF 1-1/2" R-8 FOR THE ENTIRE DUCT RUN.
3. OUTSIDE AIR DUCT(S) FROM THE ENERGY RECOVERY VENTILATOR(S) TO THE EXTERIOR TERMINATION MUST HAVE A MINIMUM CONTINUOUS INSULATION OF 1-1/2" R-8 FOR THE ENTIRE DUCT RUN.
4. DRYER EXHAUST TERMINATION SHALL BE BY UNIT MANUFACTURE WALL CAP. WALL CAP TO BE PAINTED BY GENERAL CONTRACTOR, ARCHITECT TO SELECT COLOR.
5. RANGE HOOD TERMINATION SHALL BE MANUFACTURE WALL CAP OR EQUIVALENT BROAN 643 ROUND CAP/WC638 RECTANGULAR CAP. WALL CAP TO BE PAINTED BY GENERAL CONTRACTOR, ARCHITECT TO SELECT COLOR.
6. ALL EXHAUST TERMINATIONS SHALL MEET THE CODE CLEARANCE REQUIREMENTS. NAMELY, EXHAUST MUST BE 10 FEET FROM A MECHANICAL AIR INTAKE, 3 FEET FROM AN OPERABLE OPENING INTO THE BUILDING.
7. DUCTS ROUTED WITHIN JOISTS SHALL BE DONE PER ARCHITECTURAL DETAILS. THIS IS A CODE REQUIREMENT.
8. ALL SUPPLY AND EXHAUST OUTLETS/INLETS SHALL HAVE A MEANS OF BALANCING THE AIRFLOW RATE; ACCESS SHALL BE MAINTAINED FOR BALANCING OUTLETS.
9. ERV-1 SHALL USE BROAN WALL CAP MODEL 641 FOR OUTSIDE EXHAUST AND BROAN WALL CAP MODEL 641FA FOR OUTSIDE INTAKE. PAINTED BY G.C.
10. ERV-2 SHALL USE BROAN WALL CAP MODEL 643 FOR OUTSIDE EXHAUST AND BROAN WALL CAP MODEL 643FA FOR OUTSIDE INTAKE. PAINTED BY G.C.

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
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Seattle, WA 98104

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FX: 206.623.5285

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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 25

BID SET

DANA AMBER COLE
STATE OF WASHINGTON
0041009
REGISTERED
PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

PLAN - LEVEL 1

PERMIT #	
DRAWN	AJ, JL, PH, BF, KS
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ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

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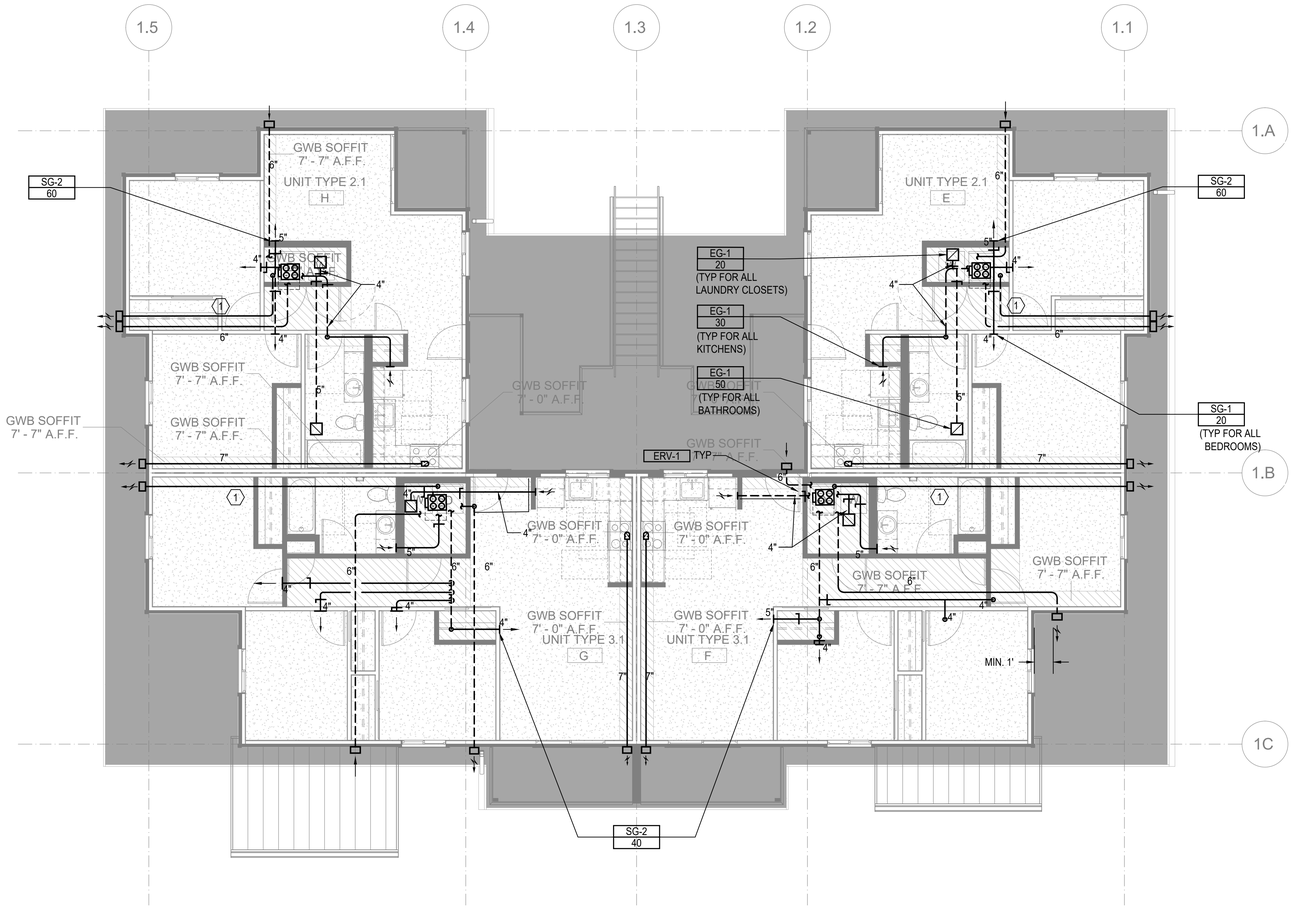

FLOOR PLAN - BUILDING 25 - LEVEL 2

SCALE: 3/16"=1'-0"

FLAG NOTES (X):

1. 4" DRYER EXHAUST DUCT. CONFIRM IN FIELD LENGTH OF DUCT DOES NOT EXCEED DRYER MANUFACTURE INSTALLATION LENGTH.
2. 12" X 4" RECTANGULAR DUCT.

LINE TYPES:

1. DASHED LINE TYPE REFERS TO DUCT RUNS IN THE JOIST - - - - - -

GENERAL NOTES:

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BUILDING 25

BID SET

DIANE AMBER KNUTSON — STATE OF WASHINGTON — 0041009 — REGISTERED PROFESSIONAL ENGINEER
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PLAN - LEVEL 2

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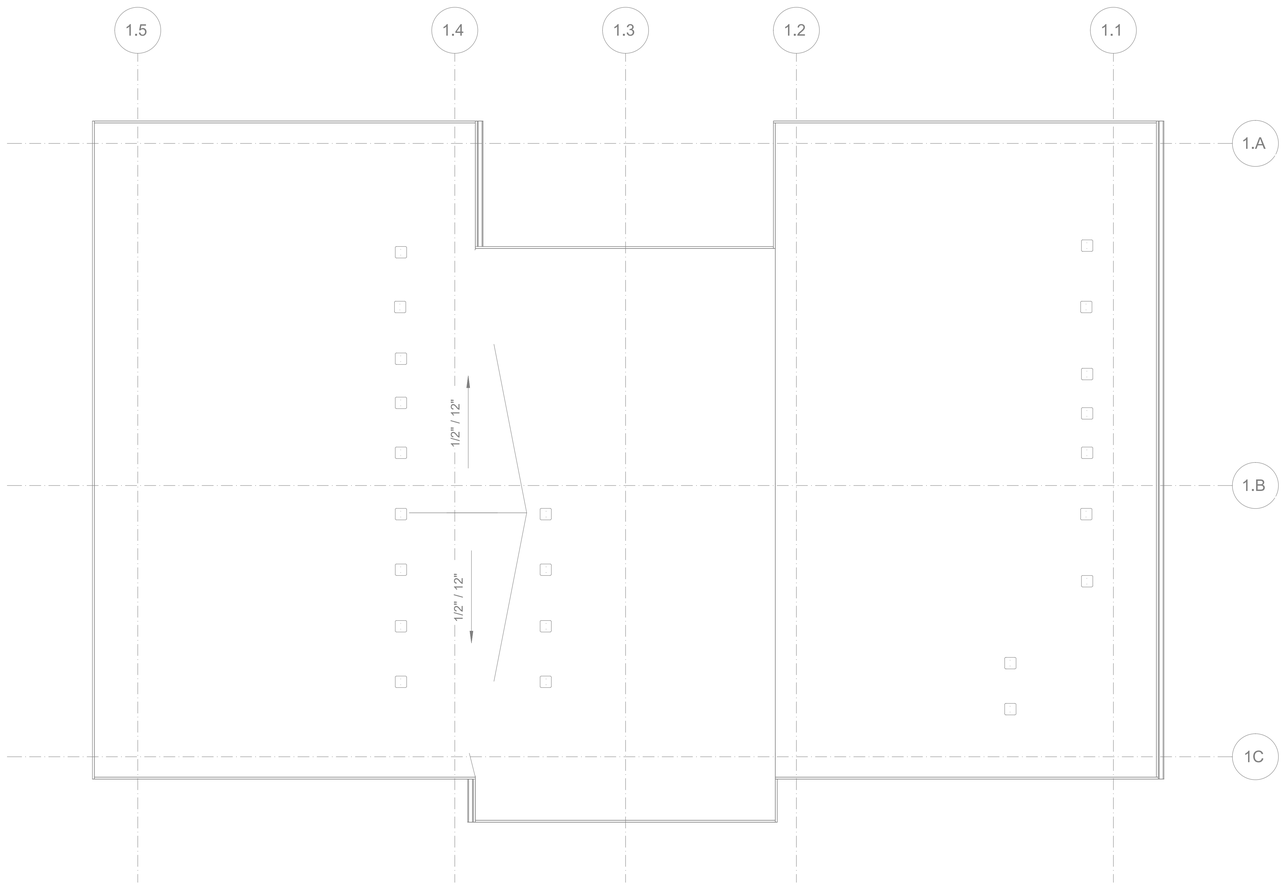

FLOOR PLAN - BUILDING 25 - ROOF - FOR REFERENCE ONLY

SCALE: 3/16"=1'-0"

FLAG NOTES (X):

LINE TYPES:

GENERAL NOTES:

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

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New Kirkland Heights LLLP
c/o: King County Housing Authority,
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13310 NE 133rd St.
Kirkland, WA 98034.
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13317 NE 133rd St.,
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PLAN - ROOF

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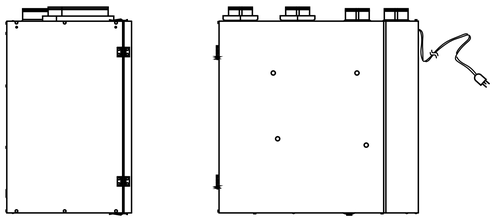
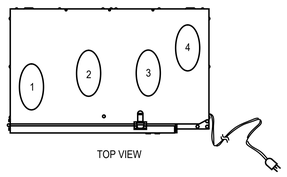
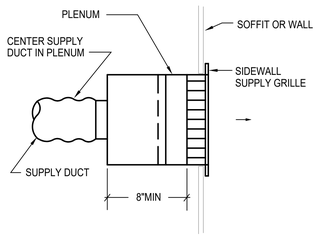


1 - EXHAUST AIR TO OUTSIDE (INSULATED)
2 - FRESH AIR FROM OUTSIDE (INSULATED)
3 - EXHAUST AIR FROM BUILDING (NOT INSULATED)
4 - FRESH AIR TO BUILDING (NOT INSULATED)



1 M301 RESIDENTIAL ERV-2 DETAIL
N.T.S.



4 M301 SIDEWALL SUPPLY GRILLE
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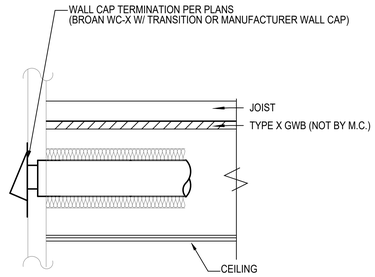
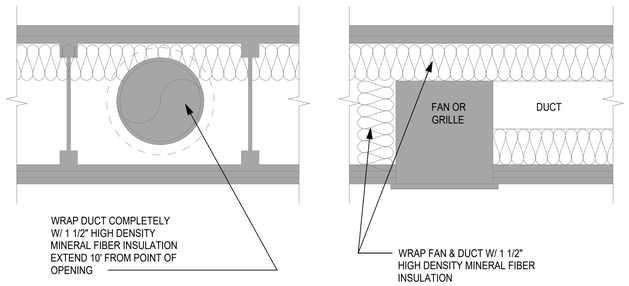


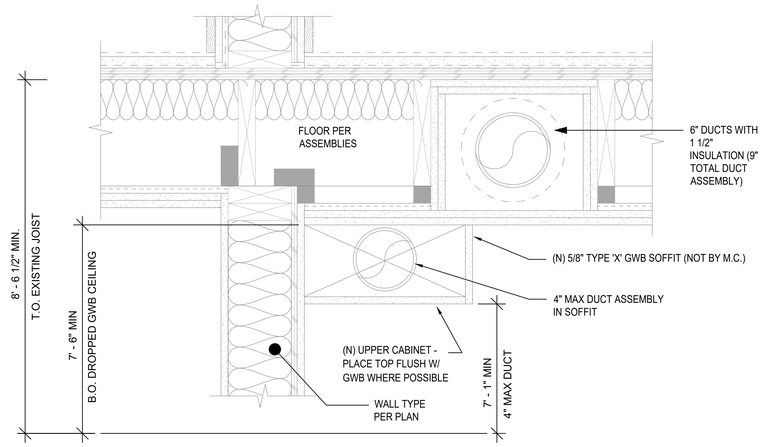
(REFERENCE SHEET A-SHEETS FOR ADDITIONAL DETAILS)
(SEE MECH. PLAN SHEETS FOR ADDITIONAL DETAILS)

2 M301 WALL CAP DETAIL
N.T.S.



NOTES:
1. OPENINGS LIMITED TO 8" MAX IN DIAMETER
2. DUCTS SHALL BE SECURED IN PLACE W/ METAL HANGERS
3. DUCTS SHALL BE STEEL AND IC RATED

5 M301 SECTION - HORIZONTAL DUCT W/ MINERAL FIBER IN FLOOR SPACE
N.T.S.



3 M301 SECTION - FLATS HORIZONTAL DUCTS IN FLOOR SPACE @ L1
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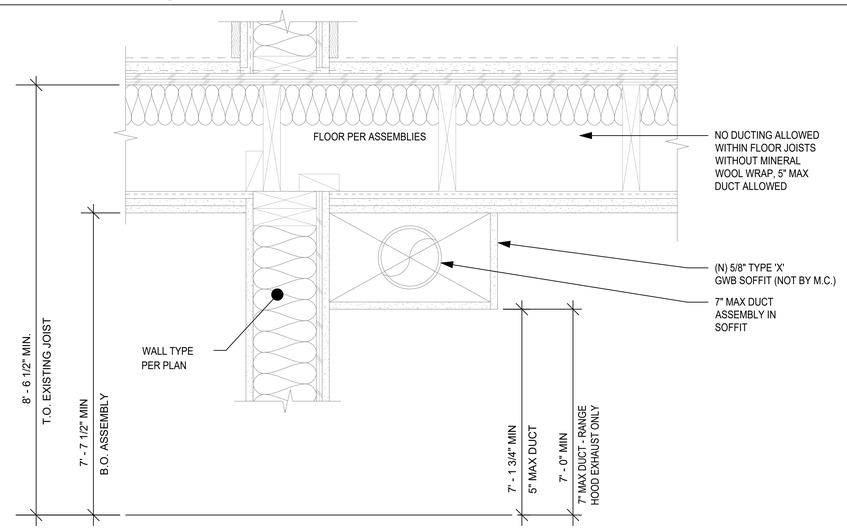

6 M301 SECTION - FLATS HORIZONTAL DUCTS IN SOFFITS @ L1
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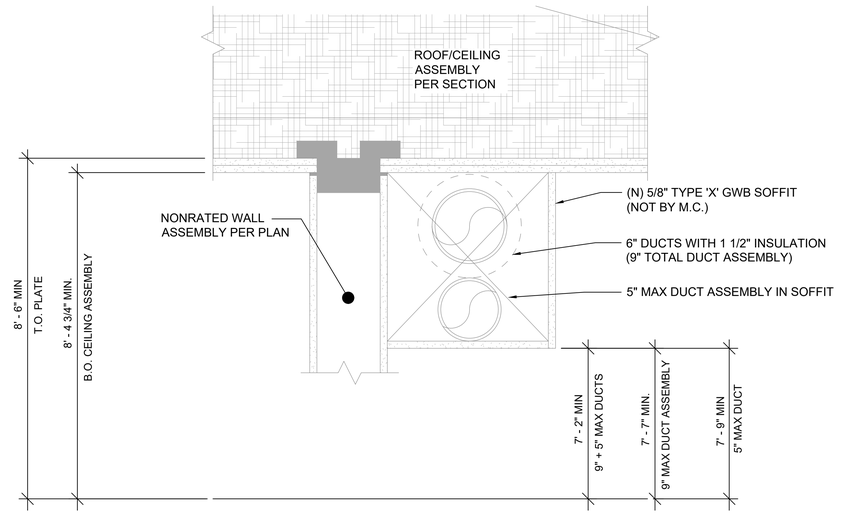

7 M301 SECTION - FLATS HORIZONTAL DUCTS IN SOFFIT @ TOP LEVEL
N.T.S.

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 1

BID SET

DANA AMBER COLE STATE OF WASHINGTON 0041009 REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

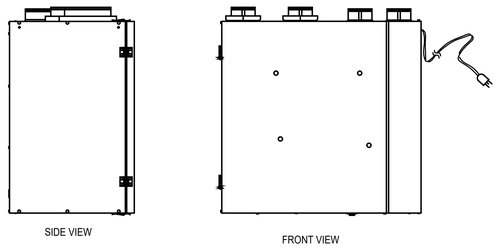
DPD STAMP

TITLE

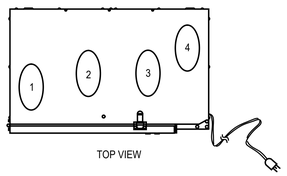
DETAILS

PERMIT #
DRAWN AJ, JL, PH, BF, KS
CHECKED DF
ISSUE DATE 4/14/2023
JOB NO. 22016
SHEET NO.:

M1-301



1 - EXHAUST AIR TO OUTSIDE (INSULATED)
2 - FRESH AIR FROM OUTSIDE (INSULATED)
3 - EXHAUST AIR FROM BUILDING (NOT INSULATED)
4 - FRESH AIR TO BUILDING (NOT INSULATED)



1 M301 RESIDENTIAL ERV-2 DETAIL
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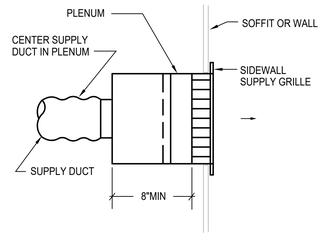

2 M301 SIDEWALL SUPPLY GRILLE
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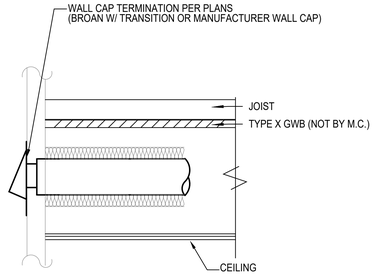

(REFERENCE SHEET A-SHEETS FOR ADDITIONAL DETAILS)
(SEE MECH. PLAN SHEETS FOR ADDITIONAL DETAILS)

3 M301 WALL CAP DETAIL
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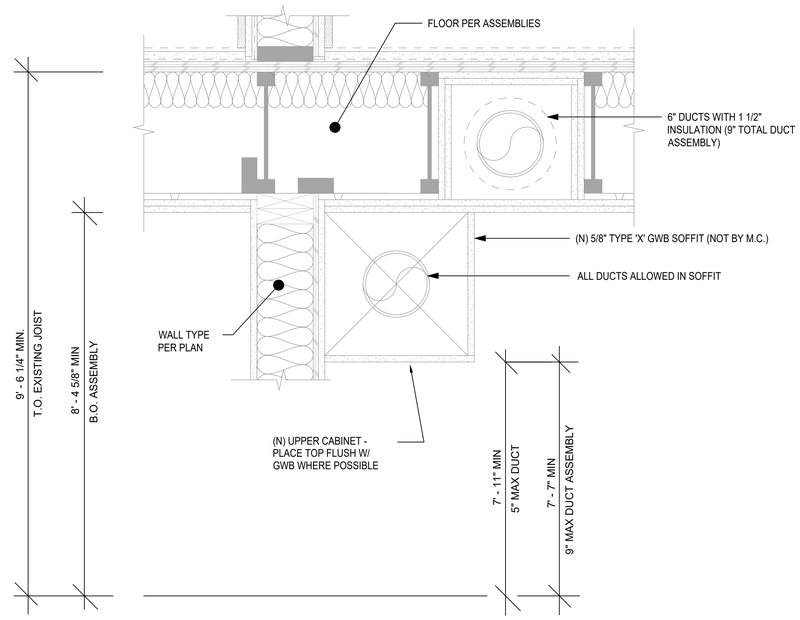

4 M301 SECTION - 3-STORY FLATS - HORIZONTAL DUCTS IN FLOOR SPACE @ L2
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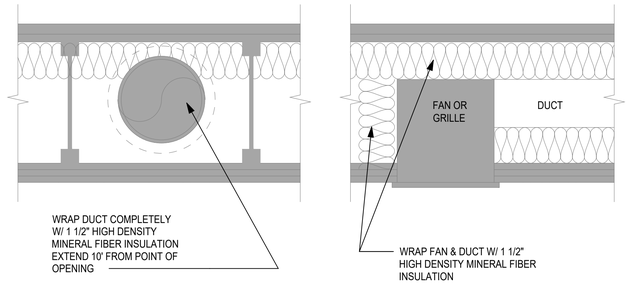

NOTES:
1. OPENINGS LIMITED TO 8" MAX IN DIAMETER
2. DUCTS SHALL BE SECURED IN PLACE W/ METAL HANGERS
3. DUCTS SHALL BE STEEL AND IC RATED

5 M301 SECTION - HORIZONTAL DUCT W/ MINERAL FIBER IN FLOOR SPACE
N.T.S.

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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KIRKLAND HEIGHTS APARTMENTS

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Kirkland, WA 98034

BUILDING 5

BID SET

DANA AMBER COLLINS
STATE OF WASHINGTON
0041009
REGISTERED PROFESSIONAL ENGINEER
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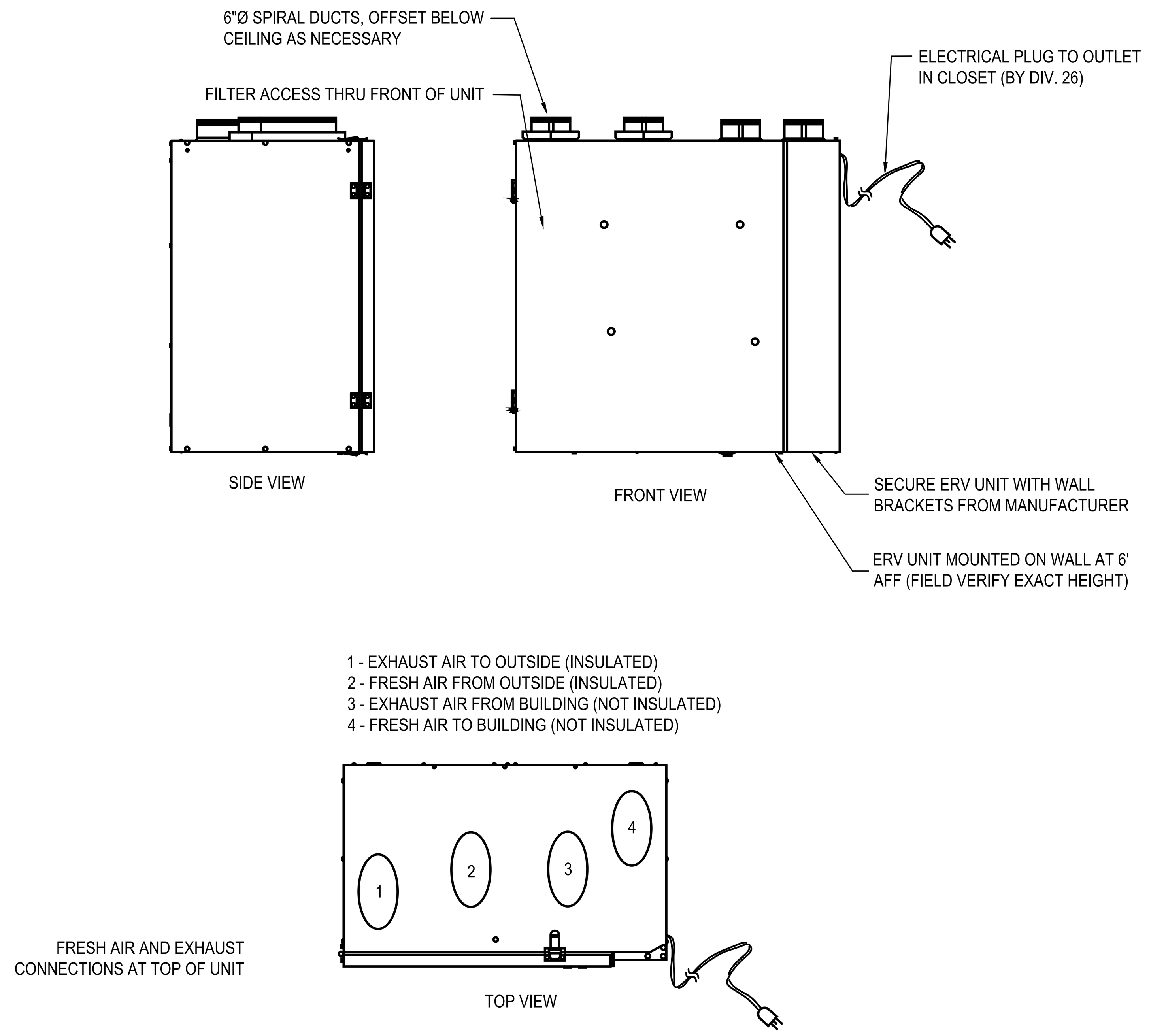

1 M301 RESIDENTIAL ERV-2 DETAIL
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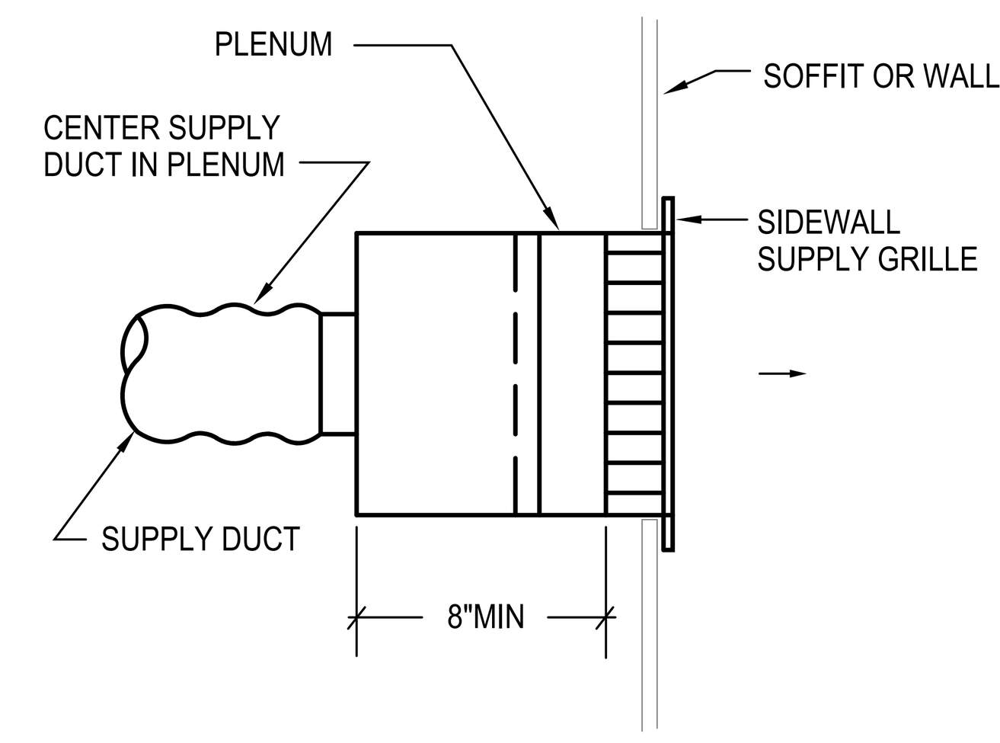

2 M301 SIDEWALL SUPPLY GRILLE
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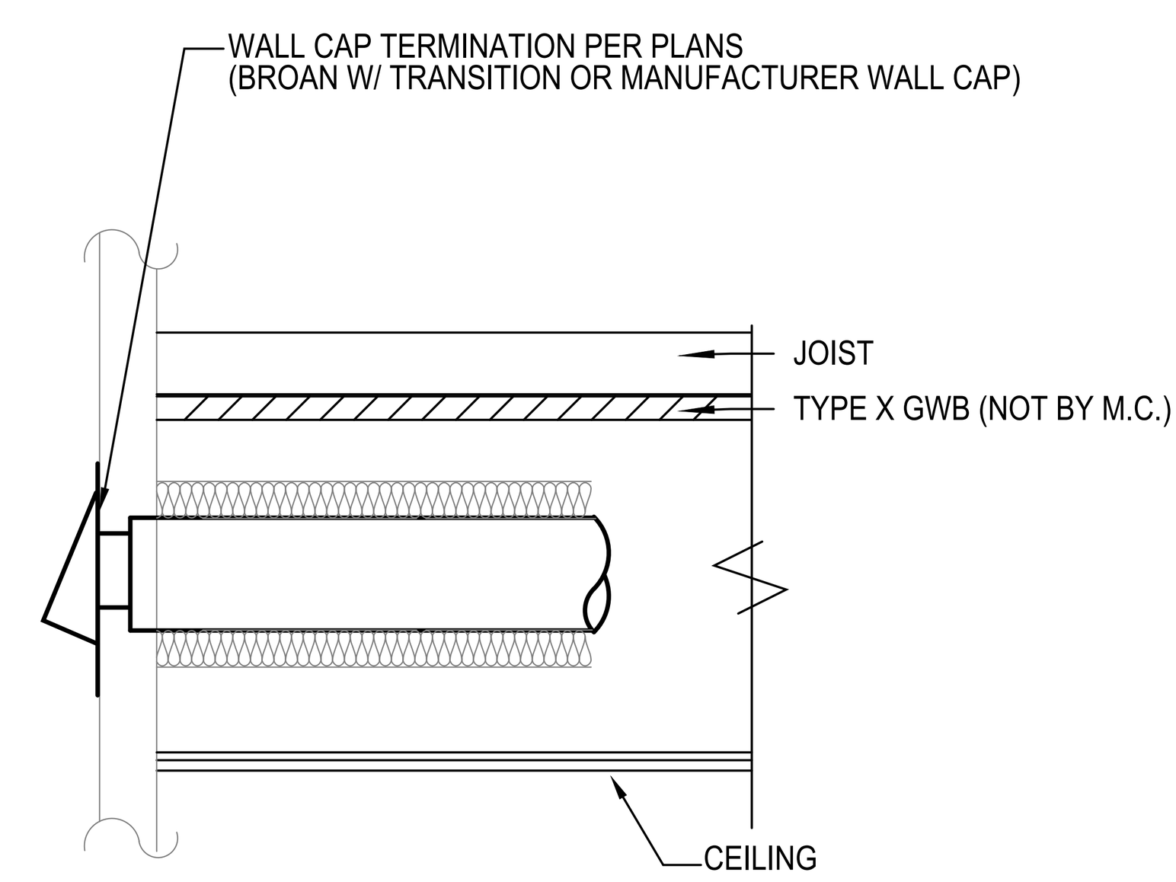

(REFERENCE SHEET A-SHEETS FOR ADDITIONAL DETAILS)
(SEE MECH. PLAN SHEETS FOR ADDITIONAL DETAILS)

3 M301 WALL CAP DETAIL
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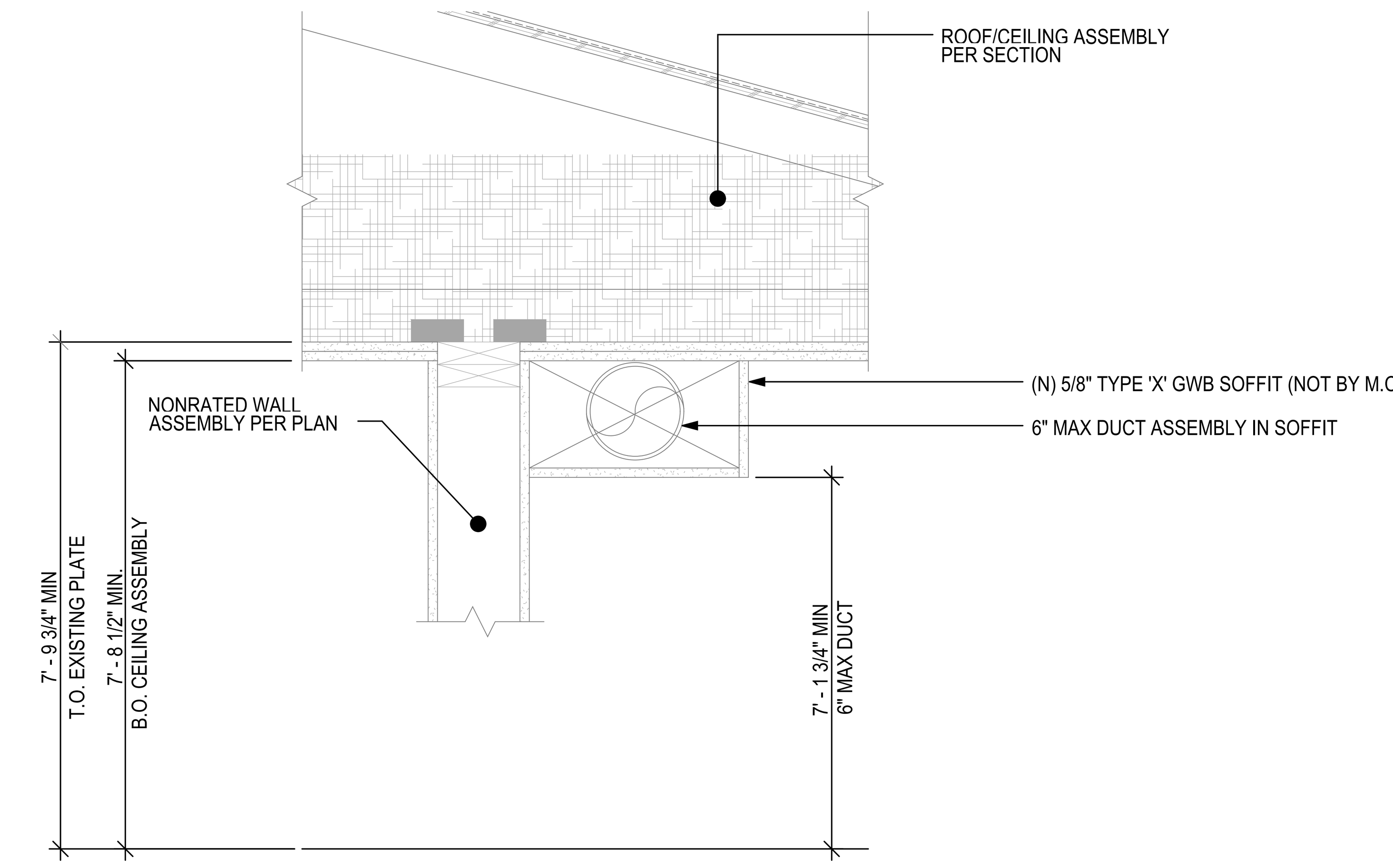

4 M301 SECTION - TOWNHOMES - HORIZONTAL DUCT IN SOFFIT @ TOP LEVEL
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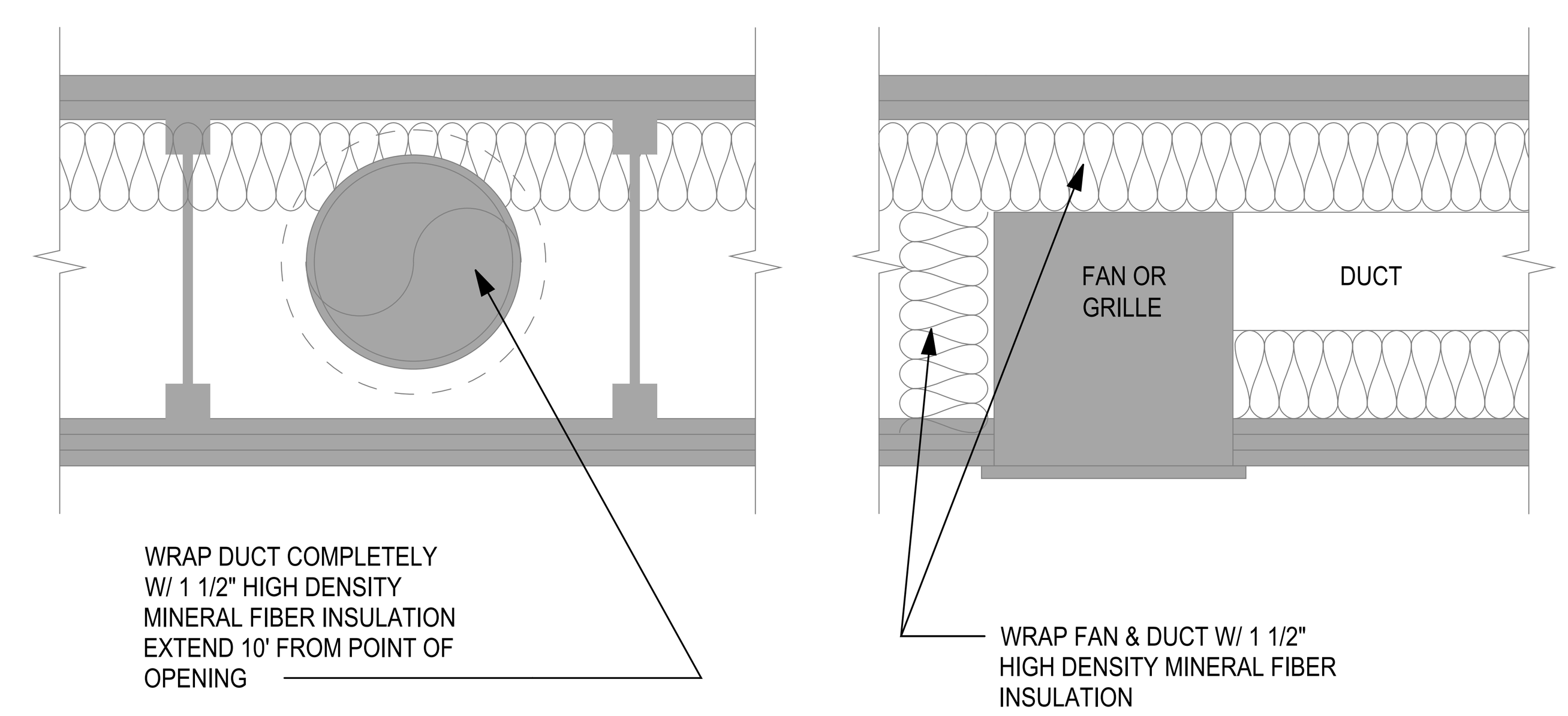

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KIRKLAND HEIGHTS APARTMENTS
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BUILDING 9
BID SET

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REVISIONS / NOTES

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M9-301

ELECTRICAL SYMBOLS LEGEND

REFERENCE SYMBOLS

- DETAIL NUMBER / SHEET (E-1)
- FLAG NOTE
- REVISION TAG (1)
- MECHANICAL EQUIPMENT (AHU-1)
- FAULT CURRENT TAG (XX kA)

FIRE ALARM SYMBOLS

- COMBINATION SMOKE/FIRE DAMPER (OR)
- FIRE ALARM CONTROL PANEL (FACP)
- FIRE ALARM REMOTE ANUNCIATOR (FARA)
- FIRE ALARM STROBE LIGHT
- FIRE ALARM SMOKE DETECTOR (SD)
- FIRE ALARM COMBINATION SMOKE DETECTOR / CARBON MONOXIDE ALARM (SD)

WIRING SYMBOLS

- BREAK (CONTINUATION)
- CAP
- STUB DOWN
- STUB UP
- CONDUIT / CABLING CONCEALED IN CEILING OR WALL
- CONDUIT / CABLING CONCEALED UNDERGROUND OR IN CEILING SPACE OF LEVEL BELOW
- GROUNDING CONDUCTOR(S) PER CODE (G)
- FLEXIBLE CONDUIT

LUMINAIRE SYMBOLS

- SHADING AND/ OR "EM" INDICATES EMERGENCY EGRESS LUMINAIRES (EM)

FL1 3a — FL1 3-Z1.2

TYPICAL LUMINAIRE ANNOTATIONS:

FL1 = LUMINAIRE TYPE
3 = CIRCUIT NUMBER
c = SWITCH LEG
Z1.2 = CONTROL ZONE

POWER SYSTEMS SYMBOLS

- PANELBOARD: SURFACE, FLUSH MOUNTED. DASHED LINE = CLEARANCE (TYPICAL)
- ELECTRICAL DISTRIBUTION EQUIPMENT, SEE PLANS FOR TYPE. DIMENSIONS, NAME, ETC. DASHED LINE = CLEARANCE (TYPICAL)
- CONNECTION TO EQUIPMENT BY OTHERS
- CONNECTION TO MOTOR
- DISCONNECT SWITCH, FUSED
- DISCONNECT SWITCH
- VARIABLE FREQUENCY DRIVE (VFD)
- EMERGENCY POWER OFF BUTTON
- GROUND BAR
- GROUND ROD
- JUNCTION BOX: WALL, FLOOR AND CEILING MTD
- RECEPTACLE, DUPLEX: WALL, FLOOR AND CLG MTD; PARALLEL SHADED = HALF-SWITCHED
- RECEPTACLE, DUPLEX: WALL MTD ABOVE BACKSPLASH, GFCI-TYPE
- RECEPTACLE, DOUBLE DUPLEX: WALL, FLOOR AND CLG MTD; PARALLEL SHADED = HALF-SWITCHED
- RECEPTACLE, DOUBLE DUPLEX: WALL MTD ABOVE BACKSPLASH, GFCI-TYPE
- RECEPTACLE, SIMPLEX: WALL, FLOOR AND CLG MTD
- RECEPTACLE, SIMPLEX: WALL MTD ABOVE BACKSPLASH, GFCI-TYPE
- SPECIALTY RECEPTACLE: WALL, FLOOR AND CLG MTD. NEMA TYPE AS INDICATED ON PLANS.

TYPICAL DEVICE ANNOTATIONS:

- ON ALTERNATE POWER: 700, 701 AND 702 SYSTEMS PER NEC (702)
- WEATHERPROOF (WP)
- GFCI TYPE (GFI)
- FULLY CONTROLLED (NOT HALF-SWITCHED) (C)

LOW VOLTAGE SYSTEMS SYMBOLS

- PUSHBUTTON. WALL-MOUNTED.
- JUNCTION BOX: WALL, FLOOR AND CEILING MTD
- COMBINATION RF COAX / PHONE OUTLET WALL, FLOOR AND CEILING MTD
- COMBINATION DATA / PHONE OUTLET WALL, FLOOR AND CEILING MTD
- DATA OUTLET WALL, FLOOR AND CEILING MTD
- PHONE OUTLET WALL, FLOOR AND CEILING MTD
- RF COAX CABLE OUTLET WALL, FLOOR AND CEILING MTD (TV)
- CARD / FOB READER WALL/ MULLION AND BOLLARD MTD (CR)
- SECURITY DOOR POSITION MONITOR (DS)
- ELECTRIC STRIKE (ES)
- KEYPAD WALL/ MULLION AND BOLLARD MTD (KP)
- CCTV CAMERA LOCATION. WP = WEATHERPROOF F = FUTURE LOCATION; PREWIRE ONLY INTERIOR LOCATIONS; PREWIRE, BOX AND CONDUIT AT EXTERIOR LOCATIONS. (WP, F)
- SPEAKER, CEILING MOUNTED (SP)

CONTROL SYMBOLS

- MOTORIZED CONTROL DAMPER (M)
- THERMOSTAT
- WALL SWITCH / LOW VOLTAGE WALL STATION. SUPERSCRIPT INDICATES SWITCH TYPE (BELOW). SUBSCRIPT INDICATES SWITCHLEGS / RELAYS CONTROLLED: FOR MULTI-POLE WALL STATIONS, CONTROL FOR EACH POLE SEPARATED BY COMMA (I.E. SWITCHLEGS a AND b CONTROLLED BY ONE POLE, c ANOTHER).
- WEATHERPROOF, TYPICAL (WP)
- WALL SWITCH, LINE VOLTAGE, 1-POLE
- WALL SWITCH, LINE VOLTAGE, 3-WAY (3)
- WALL SWITCH, LINE VOLTAGE, TIMER SWITCH (TS)
- LOW VOLTAGE WALL STATION, 1-POLE, ON/OFF (1P)
- LOW VOLTAGE WALL STATION, 1-POLE, ON/OFF AND RAISE/LOWER (DX)
- LOW VOLTAGE WALL STATION, 2-POLE, ON/OFF (2P)
- LOW VOLTAGE WALL STATION, 2-POLE, ON/OFF AND RAISE/LOWER (2PDX)
- COMBINATION OCCUPANCY SENSOR SWITCH, WALL-MOUNTED (OS)
- OCCUPANCY SENSOR: WALL, CLG MTD (OS)
- PHOTO CELL, CLG MTD (PC)
- COMBINATION PHOTO CELL / OCCUPANCY SENSOR: WALL, CLG MTD (OP)

RISER DIAGRAM SYMBOLS

- CIRCUIT BREAKER, ENCLOSED CIRCUIT BREAKER (100AT GFP / 50AT) AT = TRIP AMPACITY GFP = GROUND FAULT PROTECTION PER CODE
- FUSED SWITCH. AF= FUSE RATING (100AF)
- SWITCH
- CONTACTOR/ RELAY - NORMALLY CLOSED
- CONTACTOR/ RELAY - NORMALLY OPEN
- CONTACTOR COIL (C)
- POTENTIAL TRANSFORMER. GROUND PER CODE.
- CURRENT TRANSFORMER
- DIGITAL METER (DM)
- UTILITY METER SOCKET WITH METER; PER UTILITY REQUIREMENTS; REMOTE MOUNTED. (M)
- CONNECTION TO GROUND
- GROUND BAR
- PIPE GROUND PER CODE
- UFER GROUND PER CODE
- SURGE PROTECTION DEVICE (SPD)

CODES

2020 NATIONAL ELECTRICAL CODE WITH STATE AND LOCAL AMENDMENTS
2018 WASHINGTON STATE ENERGY CODE - RESIDENTIAL
2018 INTERNATIONAL BUILDING CODE WITH STATE AND LOCAL AMENDMENTS
2018 INTERNATIONAL FIRE CODE WITH STATE AND LOCAL AMENDMENTS
2018 INTERNATIONAL MECHANICAL CODE WITH STATE AND LOCAL AMENDMENTS
2018 UNIFORM PLUMBING CODE WITH STATE AND LOCAL AMENDMENTS
AMERICANS WITH DISABILITIES ACT (ADA)
WASHINGTON CITIES ELECTRICAL CODE

ELECTRICAL SHEET LIST

ABBREVIATIONS

A, AMP	AMPERES	LBS	POUNDS
AB	ABOVE BACKSPLASH	LCP	LIGHTING CONTROL PANEL
AC	ALTERNATING CURRENT	LCZ	LIGHTING CONTROL ZONE
ACT	ACOUSTICAL CEILING TILE	LF	LINEAL FOOT
ADA	AMERICANS WITH DISABILITIES ACT	LRA	LOCKED ROTOR AMPS
ADJ	ADJUSTABLE	LTG	LIGHTING
AF	AMPERE RATING OF FUSE OR CB FRAME		
AFF	ABOVE FINISHED FLOOR	MAX	MAXIMUM
AFG	ABOVE FINISHED GRADE	MCA	MINIMUM CIRCUIT AMPACITY
AIC	AMPERE INTERRUPTING CAPACITY, AMPERE INTERRUPTING RATING	MED MEP	MEDIUM MECHANICAL, ELECTRICAL & PLUMBING
AL	ALUMINUM (ALLOY)		
ALT	ALTERNATE		& PLUMBING
APPROX	APPROXIMATE	MEZZ	MEZZANINE
ARCH	ARCHITECTURAL/ARCHITECT	MIN	MINIMUM OR MINUTE
AS	AMPERE RATING OF SWITCH	MISC	MISCELLANEOUS
AT	CB TRIP SETTING (AMPS)	MLO	MAIN LUGS ONLY
ATS	AUTOMATIC TRANSFER SWITCH	MNT	MOUNTED
AUTO	AUTOMATIC	MOCP	MAXIMUM OVERCURRENT PROTECTION
AUX	AUXILIARY		
AWG	AMERICAN WIRE GAUGE	N/A	NOT APPLICABLE
		N	NEUTRAL
BFF	BELOW FINISHED FLOOR	NC	NORMALLY CLOSED
BHP	BRAKE HORSE POWER	NEC	NATIONAL ELECTRICAL CODE
BLDG	BUILDING	-, NEG	NEGATIVE
		NEMA	NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION
C	CONDUIT		
CB	CIRCUIT BREAKER	NIC	NOT IN CONTRACT
CFM	CUBIC FEET PER MINUTE	NL	NIGHT LIGHT (UNSWITCHED)
CKT	CIRCUIT	NO	NORMALLY OPEN
CLG	CEILING	NOM	NOMINAL
CO	CARBON MONOXIDE	NPT	NATIONAL PIPE THREAD
CO2	CARBON DIOXIDE	NTS	NOT TO SCALE
CONN	CONNECTED		
CT	CURRENT TRANSFORMER	OC	ON CENTER
CU	COPPER	OCC	OCCUPANCY
		OD	OUTSIDE DIAMETER
dB	DECIBEL	OS	OCCUPANCY SENSOR
DC	DIRECT CURRENT		
° OR DEG.	DEGREE	P	POLE
DIA	DIAMETER	PC	PHOTOCELL
DISC	DISCONNECT	PERF	PERFORATED
DIST	DISTRIBUTION	Φ OR PH	PHASE
DIV	DIVISION	PNL	PANELBOARD
DN	DOWN	POC	POINT OF CONNECTION
DP	DISTRIBUTION PANEL	PSF	POUNDS PER SQUARE FOOT
DWG(S)	DRAWING(S)	PSI	POUNDS PER SQUARE INCH
DZ	DAYLIGHT CONTROL ZONE (LIGHTING)		
		QTY	QUANTITY
EA	EACH		
EM	EMERGENCY (700 SYSTEM)	REQ	REQUIRED
EMT	ELECTRICAL METALLIC TUBING	RLX	RELOCATE EXISTING
EF	EXHAUST FAN	RM	ROOM
EWC	ELECTRIC WATER COOLER	RMC	RIGID METALLIC CONDUIT
EWH	ELECTRIC WATER HEATER	RNC	RIGID NON-METALLIC CONDUIT (PVC)
EX	EXISTING/EXISTING TO REMAIN	RPM	REVOLUTIONS PER MINUTE
		RTU	ROOF TOP UNIT
FA	FIRE ALARM	RV	RELIEF VALVE
FACP	FIRE ALARM CONTROL PANEL	RX	REMOVE EXISTING
FARA	FIRE ALARM REMOTE ANUNCIATOR		
FC	FOOTCANDLES	SA	SUPPLY AIR
FF	FINISHED FLOOR	SD	SMOKE DETECTOR
FLA	FULL LOAD AMPS	SF	SQUARE FOOT
FLEX	FLEXIBLE	SPD	SURGE PROTECTION DEVICE
FP	FIRE PROTECTION	SPEC	SPECIFICATION
FPM	FEET PER MINUTE	S/S, OR SS	STAINLESS STEEL
FPS	FEET PER SECOND	STD	STANDARD
FSD	FIRE SMOKE DAMPER	SWBD	SWITCHBOARD
FT	FEET/FOOT	T&P	TEMPERATURE AND PRESSURE RELIEF VALVE
FOIC	FURNISHED BY OWNER INSTALLED BY CONTRACTOR	TBD	TO BE DETERMINED
FOIO	FURNISHED BY OWNER INSTALLED BY OWNER	TC	TIMECLOCK
		TEL	TELEPHONE
		TELECOM	TELECOMMUNICATIONS
G, GND	GROUND	TEMP	TEMPERATURE
GALV	GALVANIZED	TOD	TOP OF DECK
GC	GENERAL CONTRACTOR	TOJ	TOP OF JOIST
GFI	GROUND FAULT CIRCUIT INTERRUPTER	T&P	TEMPERATURE & PRESSURE
GFP	GROUND FAULT PROTECTION	TSP	TOTAL STATIC PRESSURE
GRC	GALVANIZED RIGID STEEL CONDUIT	TYP	TYPICAL
H	HEIGHT	UL	UNDERWRITERS LABORATORY
HP	HORSEPOWER	UNO	UNLESS NOTED OTHERWISE
HTR	HEATER	UPS	UNINTERRUPTIBLE POWER SUPPLY
HVAC	HEATING VENTILATING AND AIR CONDITIONING	UTR	UP THROUGH ROOF
HW	HOT WATER	V	VOLT
HZ	HERTZ	VA	VOLT AMPS
		VFD	VARIABLE FREQUENCY DRIVE
ID	INSIDE DIAMETER/DIMENSION	VOL	VOLUME
IESNA	ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA	W	WATT
		W/	WITH
IMC	INTERMEDIATE METAL CONDUIT	WO	WITHOUT
IN	INCH/INCHES	WP	WEATHERPROOF
		WT	WEIGHT
KCMIL	THOUSAND CIRCULAR MILS		
KO	KNOCK OUT	XFR	TRANSFORMER
KW	KILOWATT/KILOWATTS		
KWH	KILOWATT HOUR(S)		
KVA	KILOVOLT AMPS		

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KIRKLAND HEIGHTS APARTMENTS

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Kirkland, WA 98034

BUILDING 1

BID SET

GEORGINA L. JAMES — STATE OF WASHINGTON — 45781 — REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

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TITLE

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DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
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GENERAL PROJECT NOTES

1. THESE PLANS ARE SCHEMATIC AND DO NOT SHOW EXACT ROUTING, DEVICE LOCATIONS, ETC. THE ELECTRICAL, LOW VOLTAGE AND FIRE ALARM CONTRACTORS SHALL COORDINATE WITH ALL OTHER TRADES AND PROVIDE COMPLETE AND FULLY OPERATIONAL AND COORDINATED ELECTRICAL AND FIRE ALARM SYSTEMS THAT MEET ALL REQUIREMENTS OF THE OWNER, CODE AND THE LOCAL AHJ AND THE CONTRACT DOCUMENTS.
2. MATERIALS, METHODS AND INSTALLATION SHALL COMPLY WITH THE PROVISIONS OF THE LATEST EDITION (WITH STATE AND LOCAL AMENDMENTS) OF THE NATIONAL ELECTRICAL CODE, WASHINGTON STATE ENERGY CODE, INTERNATIONAL BUILDING CODE, INTERNATIONAL FIRE CODE, INTERNATIONAL MECHANICAL CODE, UNIFORM PLUMBING CODE, THE AMERICANS WITH DISABILITY ACT AND LOCAL CODES AND ORDINANCES.
3. CONFIRM ALL DEVICE AND EQUIPMENT LOCATIONS AND QUANTITIES WITH THE OWNER AND ARCHITECT PRIOR TO THE START OF CONSTRUCTION.
4. CONTRACTORS TO MAINTAIN THE FIRE RATING OF ANY FIRE-RATED WALLS AND FLOORS. ALL FLOOR PENETRATIONS TO BE FINISHED TO A SMOOTH SURFACE.
5. INSTALL ALL EQUIPMENT PER CODE AND MANUFACTURER'S INSTRUCTIONS; THESE DRAWINGS ARE DIAGRAMMATIC. REFER TO THE MECHANICAL/PLUMBING EQUIPMENT COORDINATION SCHEDULE FOR CONNECTION REQUIREMENTS FOR SPECIFIC MECHANICAL AND PLUMBING EQUIPMENT. SEE THE PANEL SCHEDULES AND FEEDER AND BRANCH CIRCUIT SCHEDULES FOR CIRCUIT SIZES.
6. ALL ELECTRICAL AND LOW VOLTAGE SYSTEM DEVICES AND EQUIPMENT (LUMINAIRES, CONDUIT AND CABLING, ETC) SHALL BE INDEPENDENTLY SUPPORTED (I.E. DO NOT SUPPORT LUMINAIRES FROM MECHANICAL EQUIPMENT, ETC). PROVIDE SUPPORTS PER CODE AND AHJ REQUIREMENTS.
7. ALL UTILITY INFRASTRUCTURE (POWER AND TELECOM) SHALL MEET THE UTILITY SERVICE PROVIDERS' REQUIREMENTS.
8. ALL NEW RACEWAYS AND CABLING SHALL BE INSTALLED CONCEALED WHEREVER POSSIBLE. AT OPEN CEILING AREAS, CONTRACTOR MUST PROVIDE CONDUCTORS / CABLING IN CONDUIT. COORDINATE THE ROUTING OF THE CONDUIT AT OPEN CEILING AREAS WITH THE ARCHITECT. ALL CONDUIT AND CABLING SHALL BE INSTALLED PARALLEL WITH BUILDING LINES. THE CONTRACTORS SHALL COORDINATE WITH THE CEILING TYPES IN ALL ROOMS AND ENSURE THAT ALL JUNCTION BOXES ARE ACCESSIBLE AFTER THE WORK OF ALL TRADES IS COMPLETE. JUNCTION BOXES SHALL NOT BE LOCATED ON HARD CEILINGS OR IN WALLS IN "FRONT OF HOUSE" SPACES WITHOUT PRIOR APPROVAL FROM ARCHITECT.
9. COORDINATE CONDUIT AND CABLING ROUTING WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO AVOID CONFLICTS. ROUTE CONDUIT AS TO MINIMIZE PENETRATIONS THROUGH PARTITIONS.
10. COORDINATE THE EXACT LOCATIONS OF CEILING MOUNTED DEVICES WITH ALL OTHER TRADES. OCCUPANCY / VACANCY SENSORS SHALL BE INSTALLED AT LEAST 8-FT OR THE MANUFACTURER'S RECOMMENDED DISTANCE FROM ALL HVAC EXHAUST DIFFUSERS. LOCATE PHOTO CELLS PER MANUFACTURER'S INSTRUCTIONS.
11. COORDINATE THE LOCATIONS OF ALL WALL-MOUNTED DEVICES (OCCUPANCY SENSOR SWITCHES, LOW VOLTAGE WALL STATIONS, LINE VOLTAGE SWITCHES, THERMOSTATS, ETC) WITH LOCATIONS AND SWINGS OF DOORS. DO NOT LOCATE DEVICES SUCH THAT THEY WILL BE BEHIND ANY DOOR WHEN THAT DOOR IS OPEN WITHOUT PRIOR APPROVAL OF THE ARCHITECT.
12. BACK-TO-BACK DEVICES ARE NOT ALLOWED; INSTALL IN SEPARATE STUD CAVITIES.
13. THE ELECTRICAL CONTRACTOR SHALL PERFORM SHORT-CIRCUIT / FAULT CURRENT AND ARC FLASH STUDIES FOR THE PROJECT PER THE ACTUAL INTENDED INSTALLATION (FINAL GEAR SELECTION, ACTUAL FEEDER LENGTHS, ETC). STUDIES SHALL BE SUBMITTED TO THE ENGINEER WITH THE GEAR SUBMITTAL FOR REVIEW. FINAL STUDIES SHALL BE STAMPED BY AN ELECTRICAL ENGINEER CURRENTLY REGISTERED IN THE THE STATE OF WASHINGTON AND SHALL BE SUBMITTED TO THE LOCAL AHJ. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ARC FLASH LABELS ON ALL ELECTRICAL DISTRIBUTION EQUIPMENT PER CODE AND AHJ REQUIREMENTS. SEE THE SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
14. LIGHTING CONTROL COORDINATION MEETING: THE ELECTRICAL CONTRACTOR SHALL COORDINATE A LIGHTING CONTROL COORDINATION MEETING WITH THE OWNER, ARCHITECT, GENERAL CONTRACTOR, ELECTRICAL CONTRACTOR AND AN AUTHORIZED SERVICE REPRESENTATIVE OF THE INTENDED LIGHTING CONTROL SYSTEM FOR THE PROJECT TO DISCUSS THE LIGHTING CONTROL INTENT FOR THE PROJECT AND INTEGRATION OF THE LIGHTING CONTROL SYSTEM. THIS MEETING SHALL OCCUR AT LEAST TEN (10) WORKING DAYS PRIOR TO SUBMITTING THE LIGHTING CONTROL SUBMITTAL; THE LIGHTING CONTROL SUBMITTAL SHALL REFLECT THE DECISIONS MADE DURING THIS MEETING.
15. THE ELECTRICAL CONTRACTOR SHALL MARK LOCATIONS OF ALL DEVICES FOR POWER AND LOW VOLTAGE SYSTEMS (RECEPTACLES, TELECOM OUTLETS, CATV OUTLETS, FLOORBOXES, ETC) THROUGHOUT THE PROJECT FOR THE OWNER AND ARCHITECT TO REVIEW AND APPROVE PRIOR TO WIRING AND INSTALLATION OF DEVICES/ INFRASTUCTURE OF DEVICES. WHEN REQUESTED BY THE ARCHITECT AND OWNER, THE ELECTRICAL CONTRACTOR SHALL RELOCATE DEVICES AND EQUIPMENT UP TO SIX (6) FEET IN ANY DIRECTION AT NO COST TO THE PROJECT.
16. THE ELECTRICAL CONTRACTOR SHALL MAKE ALL REQUIRED SUBMISSIONS TO THE AUTHORITIES HAVING JURISDICTION FOR PERMITS AND APPROVAL OF ALL ELECTRICAL SYSTEMS AND SHALL PAY ALL FEES ASSOCIATED WITH THESE SUBMISSIONS AND OBTAINING THE REQUIRED PERMIT(S). PROVIDE A COPY OF THE FINAL APPROVED DRAWINGS WITH THE LOCAL AHJ'S APPROVAL STAMP TO THE OWNER FOR THEIR RECORDS.
17. ALL LOW VOLTAGE SYSTEMS, INCLUDING FIRE ALARM, ARE DESIGN BUILD. ANY DEVICES AND EQUIPMENT INDICATED ON THESE PLANS ARE PRELIMINARY FOR SPACE PLANNING PURPOSES ONLY. SEE LOW VOLTAGE NOTES THIS DRAWING, PRELIMINARY SYSTEMS PLANS, AND PERFORMANCE SPECIFICATIONS FOR INFORMATION AND REQUIREMENTS.
    A. FIRE ALARM SYSTEMS ARE TO BE DESIGNED, PERMITTED AND INSTALLED BY A FIRE ALARM CONTRACTOR HIRED UNDER THE SCOPE OF THIS PROJECT.
    B. ALL OTHER LOW VOLTAGE SYSTEMS (CATV, TELECOM, ETC) ARE TO BE DESIGNED AND INSTALLED BY A LOW VOLTAGE DESIGN-BUILD CONTRACTOR HIRED BY THE ELECTRICAL CONTRACTOR.
    C. THE ELECTRICAL CONTRACTOR IS TO PROVIDE ALL INFRASTRUCTURE (LINE VOLTAGE POWER, CONDUITS WITH PULLSTRINGS, BACKBOXES, EQUIPMENT RACKS, ETC) FOR THESE SYSTEMS. LOW VOLTAGE DEVICES SHOWN IN THIS BID SET ARE FOR BIDDING PURPOSES ONLY. THE ELECTRICAL CONTRACTOR SHALL CONFIRM ACTUAL DEVICE LOCATIONS, QUANTITIES, AND REQUIREMENTS WITH THE OWNER'S SYSTEM INSTALLERS AT THE START OF CONSTRUCTION.
    D. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH ALL TELECOM UTILITY SERVICE PROVIDERS TO BRING TELECOM SERVICE TO THE BUILDING.

LOW VOLTAGE PROJECT NOTES

1. SEE GENERAL PROJECT NOTES, THIS DRAWING, FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
2. ALL LOW VOLTAGE SYSTEMS, INCLUDING FIRE ALARM, ARE DESIGNED BY OTHERS. ANY DEVICES AND EQUIPMENT INDICATED ON THESE PLANS ARE PRELIMINARY FOR SPACE PLANNING PURPOSES ONLY. SEE NOTES THIS DRAWING, PRELIMINARY SYSTEMS PLAN, AND PERFORMANCE SPECIFICATIONS FOR INFORMATION AND REQUIREMENTS.
3. FIRE ALARM SYSTEMS ARE TO BE DESIGNED, PERMITTED AND INSTALLED BY A FIRE ALARM CONTRACTOR HIRED UNDER THE SCOPE OF THIS PROJECT. THE DESIGN-BUILD FIRE ALARM CONTRACTOR SHALL DESIGN AND PROVIDE COMPLETE AND FULLY OPERATIONAL FIRE ALARM SYSTEM MEETING THE REQUIREMENTS OF CODE, THE LOCAL AHJ AND THE FIRE MARSHAL. ANY DEVICES SHOWN ON THE ELECTRICAL DRAWINGS ARE SCHEMATIC FOR COORDINATION PURPOSES ONLY. SEE THE PERFORMANCE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

   THE FIRE ALARM CONTRACTORS SHALL MAKE ALL REQUIRED SUBMISSIONS TO THE AUTHORITIES HAVING JURISDICTION FOR PERMITS AND APPROVAL OF ALL FIRE ALARM SYSTEMS AND SHALL PAY ALL FEES ASSOCIATED WITH THESE SUBMISSIONS AND OBTAINING THE REQUIRED PERMIT(S). THE FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR DESIGNING AND PROVIDING SYSTEMS THAT MEET ALL REQUIREMENTS OF CODE AND THE LOCAL AHJ; ALL ADDITIONS, REVISIONS, RESUBMITTALS, ETC REQUIRED TO OBTAIN AHJ APPROVAL SHALL BE CARRIED OUT BY THE FIRE ALARM CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER. PROVIDE A COPY OF THE FINAL APPROVED DRAWINGS WITH THE LOCAL AHJ'S APPROVAL STAMP TO THE OWNER FOR THEIR RECORDS.
4. THE ALERTING SYSTEM AND RADIO SYSTEM ARE TO BE MODIFIED BY VENDORS HIRED BY THE OWNER.
5. ALL OTHER LOW VOLTAGE SYSTEMS (CATV, TELECOM, CCTV, ACCESS CONTROL, ETC) ARE TO BE MODIFIED BY A LOW VOLTAGE DESIGN-BUILD CONTRACTOR HIRED BY THE ELECTRICAL CONTRACTOR.
6. ALL VOICE/ DATA SYSTEM DESIGN SHALL BE PERFORMED BY A BICSI REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER (RCDD) OR BY A DESIGN ENGINEER AT LEAST FIVE YEARS OF EXPERIENCE ON PROJECTS WITH SIMILAR SYSTEMS AND SCOPES. THE CONTRACTOR SHALL PROVIDE PROOF OF CERTIFICATION FOR THE SYSTEMS TO BE INSTALLED IN THE PROJECT AND THE CABLING, TERMINATIONS, AND EQUIPMENT PROPOSED FOR THE PROJECT.
7. ALL LOW VOLTAGE CABLING AND EQUIPMENT INSTALLATION AND TESTING SHALL BE PERFORMED BY A CERTIFIED INSTALLER. THE CONTRACTOR SHALL PROVIDE PROOF OF CERTIFICATION FOR THE SYSTEMS TO BE INSTALLED IN THE PROJECT AND THE CABLING, TERMINATIONS, AND EQUIPMENT PROPOSED FOR THE PROJECT.
8. THE ELECTRICAL CONTRACTOR IS TO PROVIDE ALL INFRASTRUCTURE (LINE VOLTAGE POWER, CONDUITS WITH PULLSTRINGS, BACKBOXES, EQUIPMENT RACKS, ETC) FOR ALL LOW VOLTAGE SYSTEMS. PRELIMINARY SYSTEMS PLAN PROVIDED IN THIS BID SET ARE FOR BIDDING PURPOSES ONLY. THE ELECTRICAL CONTRACTOR SHALL CONFIRM ACTUAL DEVICE LOCATIONS, QUANTITIES, AND REQUIREMENTS WITH THE DESIGN-BUILD LOW VOLTAGE CONTRACTOR AND ALERTING SYSTEM VENDOR AT THE START OF CONSTRUCTION.
9. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH ALL TELECOM UTILITY SERVICE PROVIDERS TO BRING TELECOM SERVICE TO THE BUILDING.

ENERGY CODE NOTES

1. SEE THE LUMINAIRE SCHEDULE, AND THE LIGHTING PLANS FOR LIGHTING AND LIGHTING CONTROL REQUIREMENTS. SYSTEMS SHALL MEET THE REQUIREMENTS OF R405.
2. OCCUPANCY SENSORS SHALL FAIL ON AND AUTOMATICALLY TURN OFF LUMINAIRES IN THEIR COVERAGE AREA WITHIN 30 MINUTES OF ALL OCCUPANTS LEAVING THE SPACE UNLESS NOTED OTHERWISE ON THE PLANS. SEE LIGHTING CONTROL SCHEDULES FOR ADDITIONAL FUNCTIONALITY REQUIREMENTS.
3. EXIT SIGNS SHALL NOT EXCEED 5 WATTS PER SIDE.
4. THE LUMINAIRES SERVING DWELLING UNITS SHALL BE LED SOURCE WITH AN EFFICACY OF AT LEAST 65 LUMENS PER WATT AS REQUIRED BY CODE.
5. LUMINAIRES SERVING THE EXIT ACCESS AND PROVIDING MEANS OF EGRESS ILLUMINATION REQUIRED BY THE IBC SHALL BE CONTROLLED BY A COMBINATION OF LISTED EMERGENCY RELAY AND OCCUPANCY SENSORS OR SIGNAL FROM ANOTHER BUILDING CONTROL SYSTEM THAT AUTOMATICALLY SHUTS OFF THE LIGHTING WHEN THE AREAS SERVED BY THAT ILLUMINATION ARE UNOCCUPIED. SEE LIGHTING PLANS.
6. THE BUILDING SHALL MEET CERTIFICATION REQUIREMENTS OF EVERGREEN SUSTAINABLE DESIGN STANDARDS (ESDS). SEE THE TEAM APPROVED CHECKLIST FOR APPLICABLE ITEMS EFFECTING THE ELECTRICAL SCOPE.
7. THE BUILDING SHALL BE COMMISSIONED PER THE REQUIREMENTS OF ESDS - SEE DIVISION 01 AND DIVISION 26 SPECIFICATIONS, COMMISSIONING NOTES THIS DRAWING AND PROJECT DRAWINGS FOR REQUIREMENTS.

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 1

BID SET

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

PROJECT NOTES

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E1-002

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION);
CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

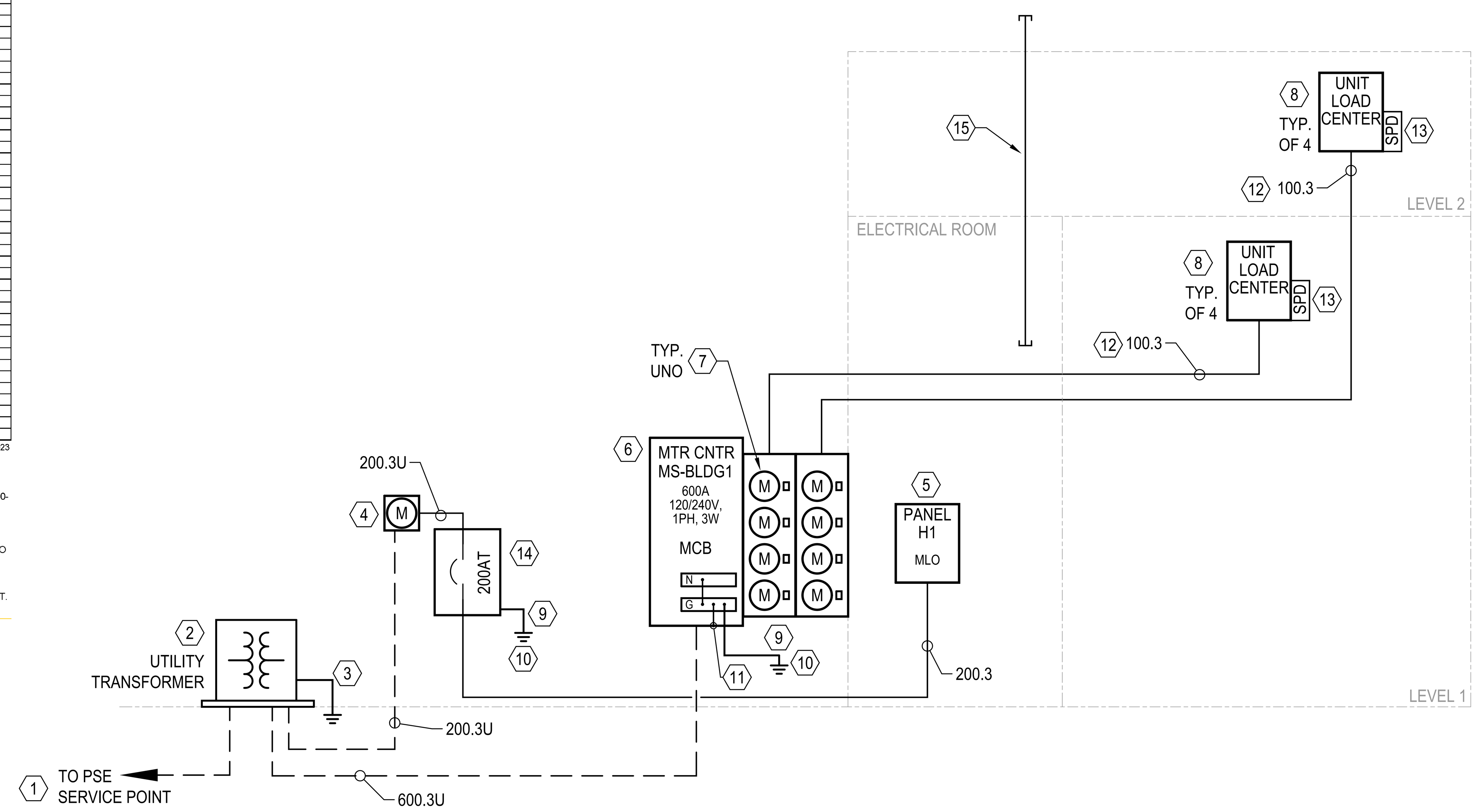
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE:NTS

FLAG NOTES ⓧ :

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (8) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 1

UNIT TYPE: 2BR - 2.1 **AREA (SF):** 782 — 4/6/2023
DEMAND LOAD (kVA): 17.93 => 74.7 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	2.35	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2 CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1 CKTS x 1500VA	=	1.50	kVA
SUBTOTAL (CONNECTED)		=	6.85	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:				
0 - 3,000VA:	100%	=	3.00	kVA
3,001VA - 120,000VA:	35%	=	1.35	kVA
> 120,000VA:	25%	=	0.00	kVA
GENERAL LIGHTING LOAD - DEMAND		=	**4.35**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)			
REFRIGERATOR	1	AT	0.7	=	0.70	kVA
RANGE HOOD	1	AT	0.3	=	0.30	kVA
MICROWAVE		AT		=	0.00	kVA
DISHWASHER		AT		=	0.00	kVA
WASHER	1	AT	1.2	=	1.20	kVA
GARBAGE DISPOSAL		AT		=	0.00	kVA
WATER HEATER		AT		=	0.00	kVA
SUBTOTAL (CONNECTED)				=	2.20	kVA
APPLIANCE DEMAND FACTOR [220.53]:			75%			
GENERAL APPLIANCE LOAD - DEMAND				=	**1.65**	**kVA**

MOTORS [220.50]:

	QTY		LOAD (kVA EACH)			
TOILET EXHAUST FAN		AT		=	0.00	kVA
ERV UNIT	1	AT	0.11	=	0.11	kVA
KITCHEN EXHAUST FAN		AT		=	0.00	kVA
+25% OF LARGEST MOTOR				=	0.03	kVA
GENERAL MOTOR LOAD - DEMAND				=	**0.14**	**kVA**
100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	3.91	kVA
	QTY		LOAD (kVA EACH)			
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50	kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00	kVA
ELECTRIC OVEN [220.55]		AT		=	0.00	kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00	kVA

TOTAL DWELLING UNIT LOAD PER NEC 220, PART III = 23.54 kVA

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.48	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	5.39	kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS; 65% NAMEPLATE	=	2.54	kVA

TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV = 17.93 kVA

UNIT TYPE: 3BR - 3.1 **AREA (SF):** 906 — 4/6/2023
DEMAND LOAD (kVA): 18.49 => 77.0 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	2.72	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2 CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1 CKTS x 1500VA	=	1.50	kVA
SUBTOTAL (CONNECTED)		=	7.22	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:				
0 - 3,000VA:	100%	=	3.00	kVA
3,001VA - 120,000VA:	35%	=	1.48	kVA
> 120,000VA:	25%	=	0.00	kVA
GENERAL LIGHTING LOAD - DEMAND		=	**4.48**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)			
REFRIGERATOR	1	AT	0.7	=	0.70	kVA
RANGE HOOD	1	AT	0.3	=	0.30	kVA
MICROWAVE		AT		=	0.00	kVA
DISHWASHER		AT		=	0.00	kVA
WASHER	1	AT	1.2	=	1.20	kVA
GARBAGE DISPOSAL		AT		=	0.00	kVA
WATER HEATER		AT		=	0.00	kVA
SUBTOTAL (CONNECTED)				=	2.20	kVA
APPLIANCE DEMAND FACTOR [220.53]:			75%			
GENERAL APPLIANCE LOAD - DEMAND				=	**1.65**	**kVA**

MOTORS [220.50]:

	QTY		LOAD (kVA EACH)			
TOILET EXHAUST FAN		AT		=	0.00	kVA
ERV UNIT	1	AT	0.11	=	0.11	kVA
KITCHEN EXHAUST FAN		AT		=	0.00	kVA
+25% OF LARGEST MOTOR				=	0.03	kVA
GENERAL MOTOR LOAD - DEMAND				=	**0.14**	**kVA**
100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	4.53	kVA
	QTY		LOAD (kVA EACH)			
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50	kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00	kVA
ELECTRIC OVEN [220.55]		AT		=	0.00	kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00	kVA

TOTAL DWELLING UNIT LOAD PER NEC 220, PART III = 24.29 kVA

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.86	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	5.54	kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS; 65% NAMEPLATE	=	2.94	kVA

TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV = 18.49 kVA

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL MS - 8 unit STACK — 4/6/2023
DEMAND LOAD (kVA): 95.86 => 399.4 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING 1.5< X < 3.5kW QTY	1.5< X < 3.5kW LOAD (kVA)	3.5kW < X < 8.75kW QTY	3.5kW < X < 8.75kW LOAD (kVA)	8.75kW < X < 12kW QTY	8.75kW < X < 12kW LOAD (kVA)
2BR - 2.1	4	27.38	8.80	0.44	15.64	4	22.00	0	0.00	0	0.00	4	35.20
3BR - 3.1	4	28.87	8.80	0.44	18.12	4	22.00	0	0.00	0	0.00	4	35.20
0								0	0.00	0	0.00	0	0.00
TOTALS:	8	56.26	17.60	0.88	33.76	8	44.00	0	0.00	0	0.00	8	70.40
	ADDITIONAL 25% OF LARGEST MOTOR:			0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD = 222.92 kVA
DEMAND FACTOR FROM TABLE 220.84 = 43%

TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC = 95.86 kVA

KIRKLAND HEIGHTS - 8 UNIT STACK FLAT (REHAB)

PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 8):	95.86	kVA
(SEE ATTACHED CALCS)		
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.		
RESIDENTIAL TOTAL:	95.86	kVA
	399.40	AMPS @ 120/240V, 1-PHASE
	PROVIDE 600A RESIDENTIAL METER CENTER	

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):		
LIGHTING - Breezeway +Interior:	1.5	kVA
LIGHTING - SITE:	1.5	kVA
GENERAL RECEPTACLES:	4.0	kVA
MECHANICAL:	1.0	kVA
ELECT HEAT (WATER RMS):	1.0	KVA
CENTRAL HOT WATER (HPWH)	5.6	KVA
ELECT SWING TANK	4.5	KVA
HEAT TRACE	0.5	kVA
MISCELLANEOUS:	2.5	kVA
EV CHARGING (2):	16.6	kVA
HOUSE TOTAL:	38.71	kVA
	161.30	AMPS @ 120/240V, 1-PHASE
WITH 25% SPARE CAPACITY	48.39	kVA
	201.6208	AMPS @ 120/240V, 1-PHASE
	PROVIDE 200A HOUSE SERVICE	
TOTAL BUILDING SERVICE:	144.25	kVA
	601.03	AMPS @ 120/240V, 1-PHASE

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS
13317 NE 133rd St., Kirkland, WA 98034

BUILDING 1
BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE
SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	E1-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	CONDUCTORS PER SET PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILITY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.
B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H1 — FED FROM: XFR — LOCATION: ELECTRICAL ROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
A/C: SEE SINGLE LINE DIAGRAM — BUS RATING: 200 AMPS — M.L.O OR MCB: MLO — 200 AMPS

CKT #	DESCRIPTION	CONN LOAD TYPE	kVA	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	CONN LOAD TYPE	kVA	DESCRIPTION	CKT #
1	LTG - BREEZEWAY	L	0.15	20.1	20 / 1	A	20 / 1	20.1	N	0.60	FIRE ALARM CONTROL PANEL	2
3	SPARE		0.00		20 / 1	B	20 / 1	20.1	N	0.24	LTG TIME CLOCK	4
5	RECEPT - LVL 1 BREEZEWAY	R	0.36	20.1	20 / 1	A	20 / 1			0.00	SPARE	6
7	RECEPT - LVL 2 BREEZEWAY	R	0.36	20.1	20 / 1	B	20 / 1	20.1	R	0.54	RECEPTS - ELECT RM	8
9	SPARE		0.00		20 / 1	A	20 / 1	20.1	R	0.72	RECEPTS - TELECOM	10
11	LTG - ELECT / MECH - CLOSETS	L	0.24	20.1	20 / 1	B	20 / 1	20.1	R	0.36	RECEPTS - TELECOM	12
13	ELECT HEATER - FIRE SPRINKLER	C	1.50	20.1	20 / 1	A	20 / 1			0.00	SPARE	14
15	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.24	20.1	20 / 1	B	20 / 1	20.1	R	0.72	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-1	18
19	SPARE		0.00		20 / 1	B						20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20.1	20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-2	22
23	LTG - SITE POLES	L	0.24	20.1	20 / 1	B						24
25	SPARE		0.00		20 / 1	A	20 / 1			0.00	SPARE	26
27	SPARE		0.00		20 / 1	B	20 / 1			0.00	SPARE	28
29	SPACE ONLY					A	30 / 2	30.2N	C	4.50	WH SWING TANK - SWH-1	30
31	SPACE ONLY					B						32
33	SPACE ONLY					A	20 / 1	20.1	N	0.36	CIRC PUMP CP-1 & MIX VALVE MV-1	34
35	SPACE ONLY					B	20 / 1	20.1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

	CONNECTED LOAD		DEMAND FACTOR	DEMAND LOAD	
L = LIGHTING	0.73	kVA	125%	0.91	kVA
R = RECEPTACLES	3.78	kVA	NEC 220.44	3.78	kVA
M = MOTORS	0.24	kVA	100%	0.24	kVA
PLUS 25% OF LARGEST MOTOR	0.24	kVA	25%	0.06	kVA
C = CONTINUOUS	9.46	kVA	125%	11.82	kVA
N = NON-CONTINUOUS	1.44	kVA	100%	1.44	kVA
K = KITCHEN	0.00	kVA	75%	0.00	kVA

PANEL CONNECTED TOTAL: 15.65 kVA, 65.19 AMPS
PANEL DEMAND TOTAL: 19.25 kVA, 78.05 AMPS

NOTES:
A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (#):
1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER

LOAD CENTER - 2 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O OR MCB: MLO — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN'L TG RECEPTS, BD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ENV. MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	DED RECEPT - AC UNIT (BY TENANT)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (#):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 5FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

LOAD CENTER - 3 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O OR MCB: MLO — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN'L TG RECEPTS, BD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ENV. MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (#):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 5FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-1	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.163					2
			/						
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS. CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES. DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	240 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3

NOTES:

1. CONFIRM EXACT LOCATION WITH ARCHITECT
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 8 UNIT STACKED FLATS

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES BED 1	BED 2	BED 3	LIVING
A	2-BDRM	CH-0.84	CH-0.7		CH-1.8
B	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
C	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
D	2-BDRM	CH-0.84	CH-0.7		CH-1.8
E	2-BDRM	CH-0.7	CH-0.56		CH-1.12
F	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
G	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
H	2-BDRM	CH-0.7	CH-0.56		CH-1.12

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.
B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 1

BID SET

REGINNA M. [illegible] STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/630 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE
& SPECS FOR ALL 'S' LIGHTING FIXTURES.

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
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BUILDING 1

BID SET

GEORGINNA M. LAMPSON
STATE OF WASHINGTON
43761
REGISTERED
PROFESSIONAL ENGINEER

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LUMINAIRE SCHEDULE

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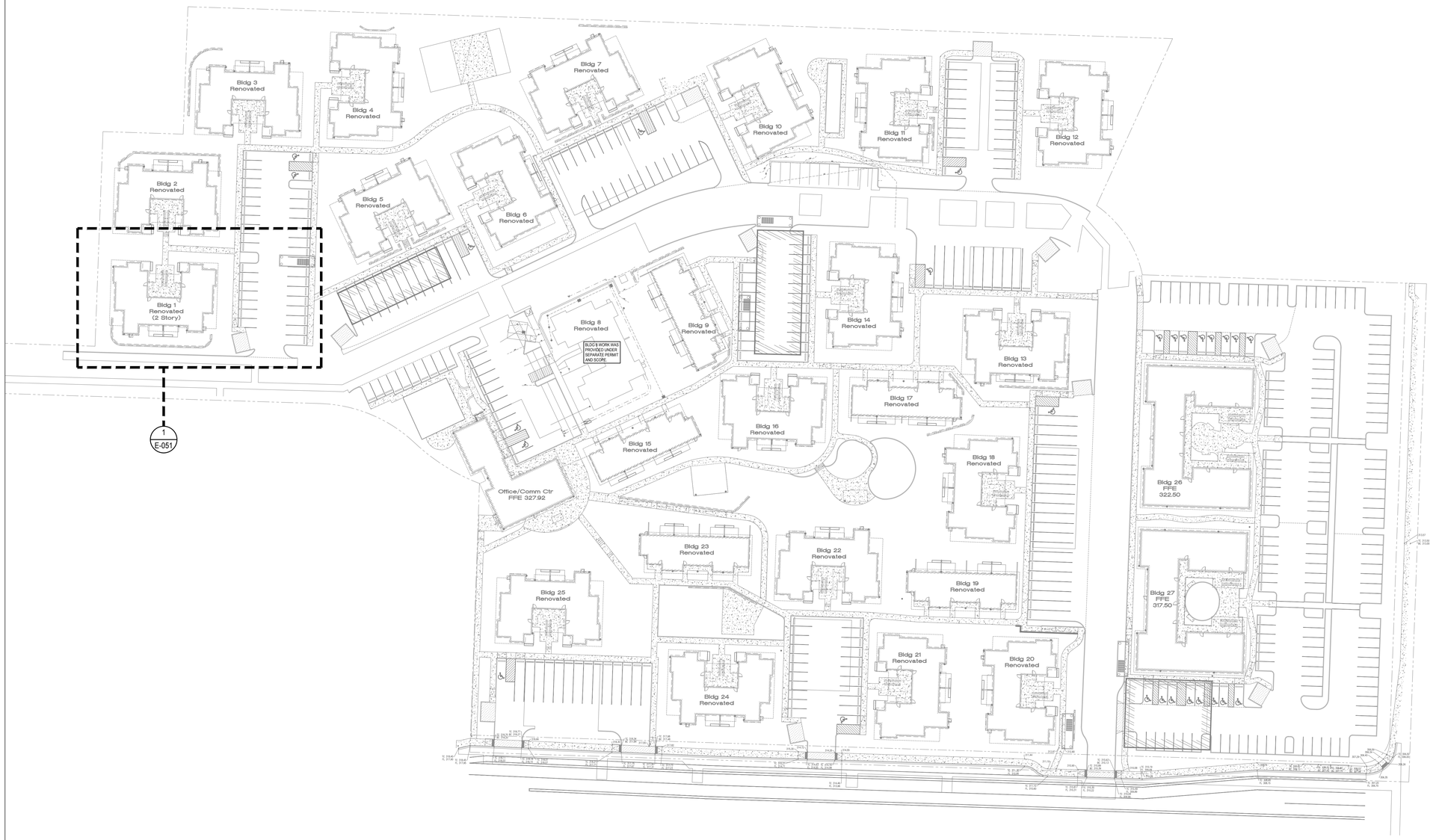

OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

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PROGINNA M. JOHNSON — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER

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OVERALL PROJECT SITE PLAN

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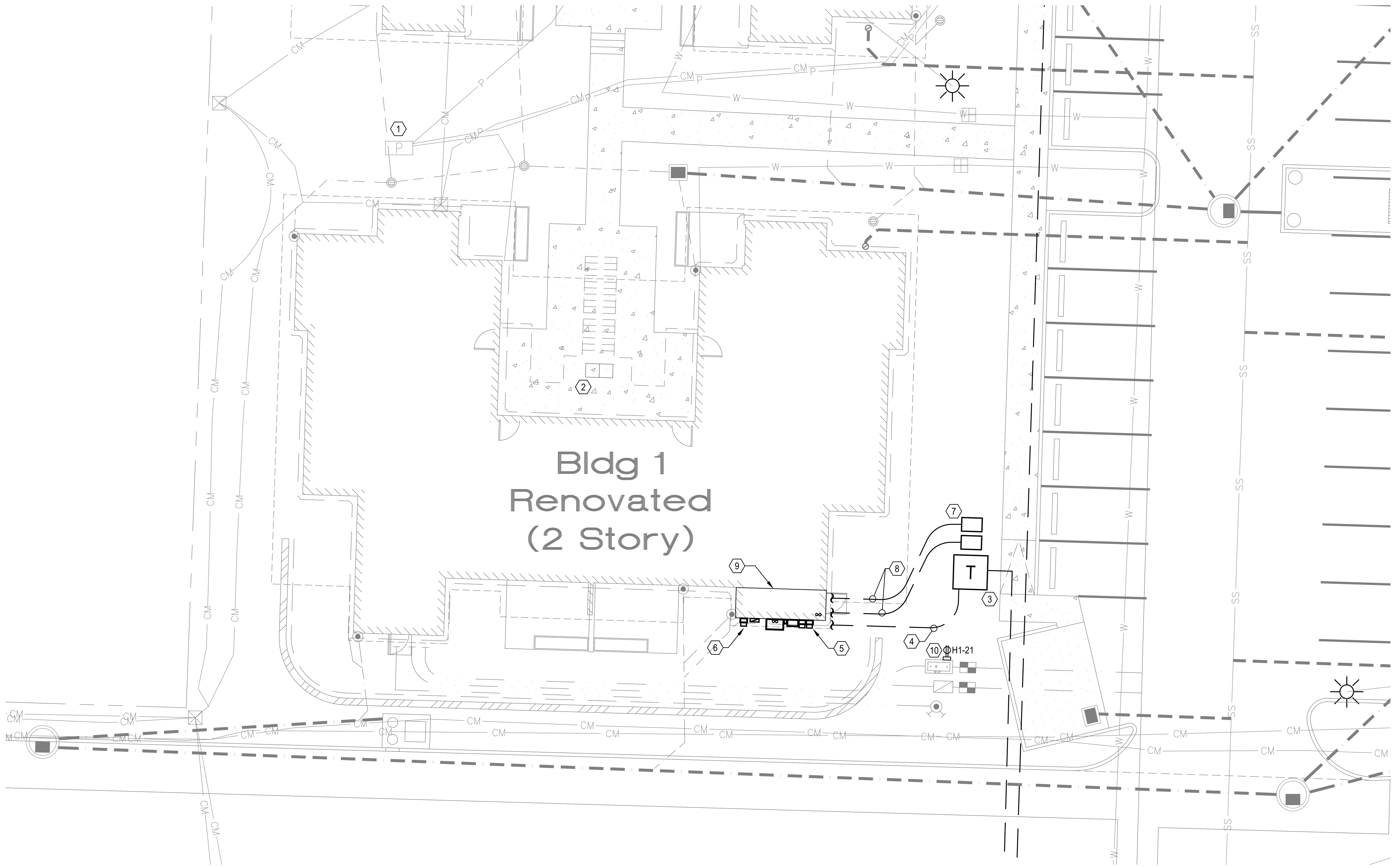
ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.



ELECTRICAL SITE PLAN - BUILDING 1

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

FLAG NOTES ⟨X⟩:

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

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BUILDING 1

BID SET

GEORGINA M. L... STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER
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ELECTRICAL SITE PLAN - BUILDING 1

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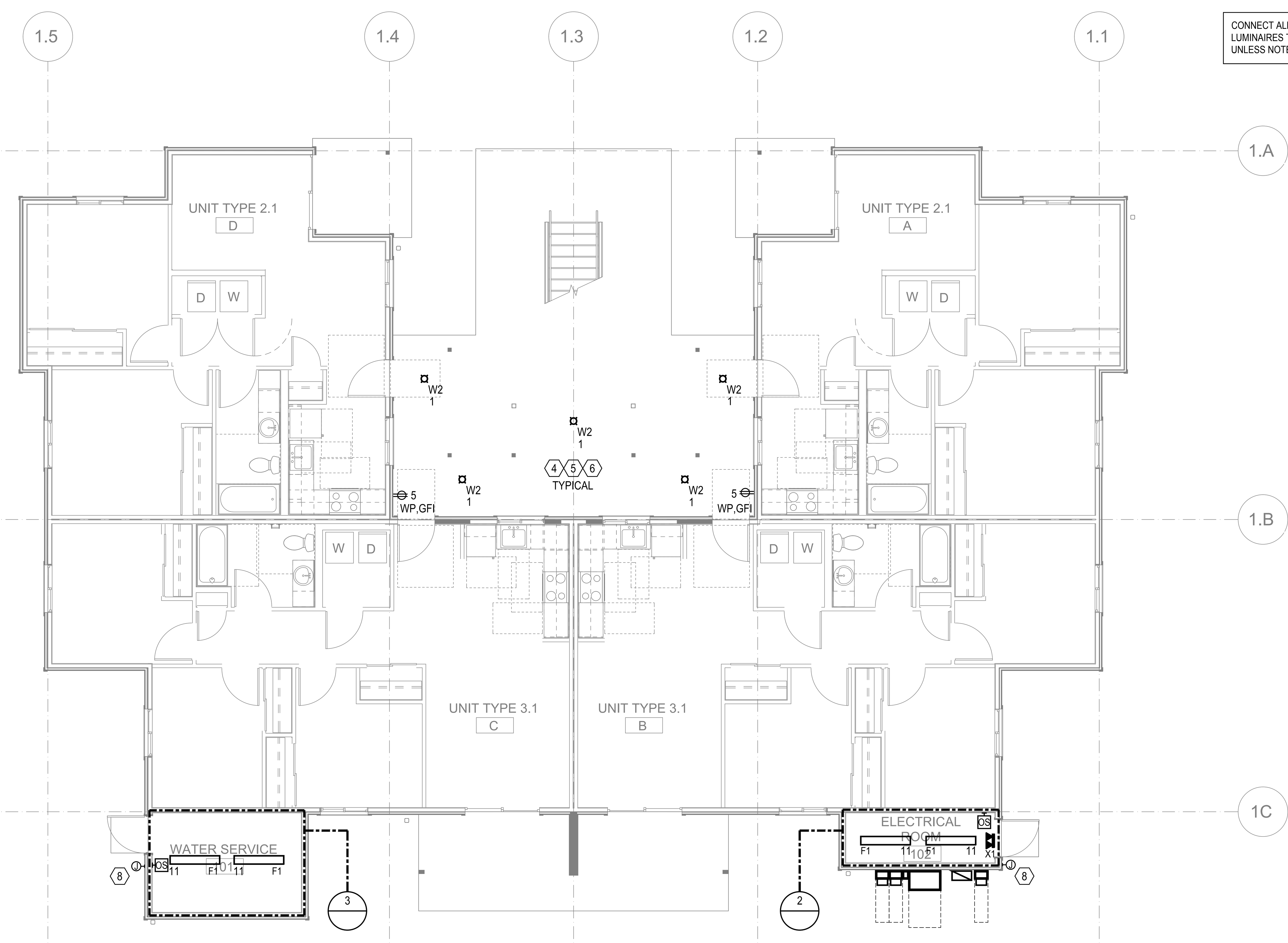
ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H1 UNLESS NOTED OTHERWISE.



POWER AND LIGHTING PLAN - BUILDING 1 - LEVEL 1

SCALE: 3/16"=1'-0"

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES ⟨X⟩:

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.

2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.

3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.

5. PROVIDE (1) 220 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR LIGHTING FIXTURES TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-220-PB-S-SD

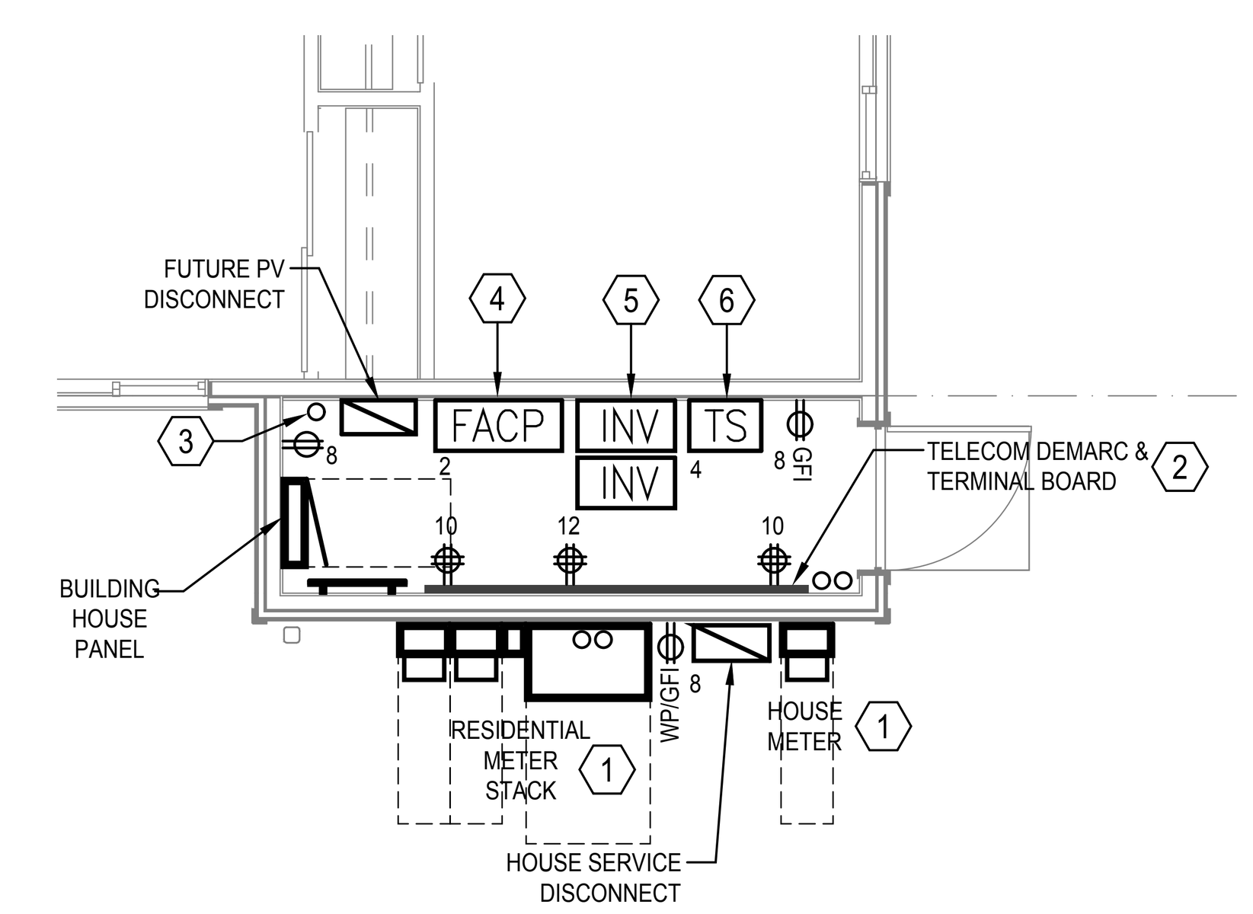
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.

7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.

8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.

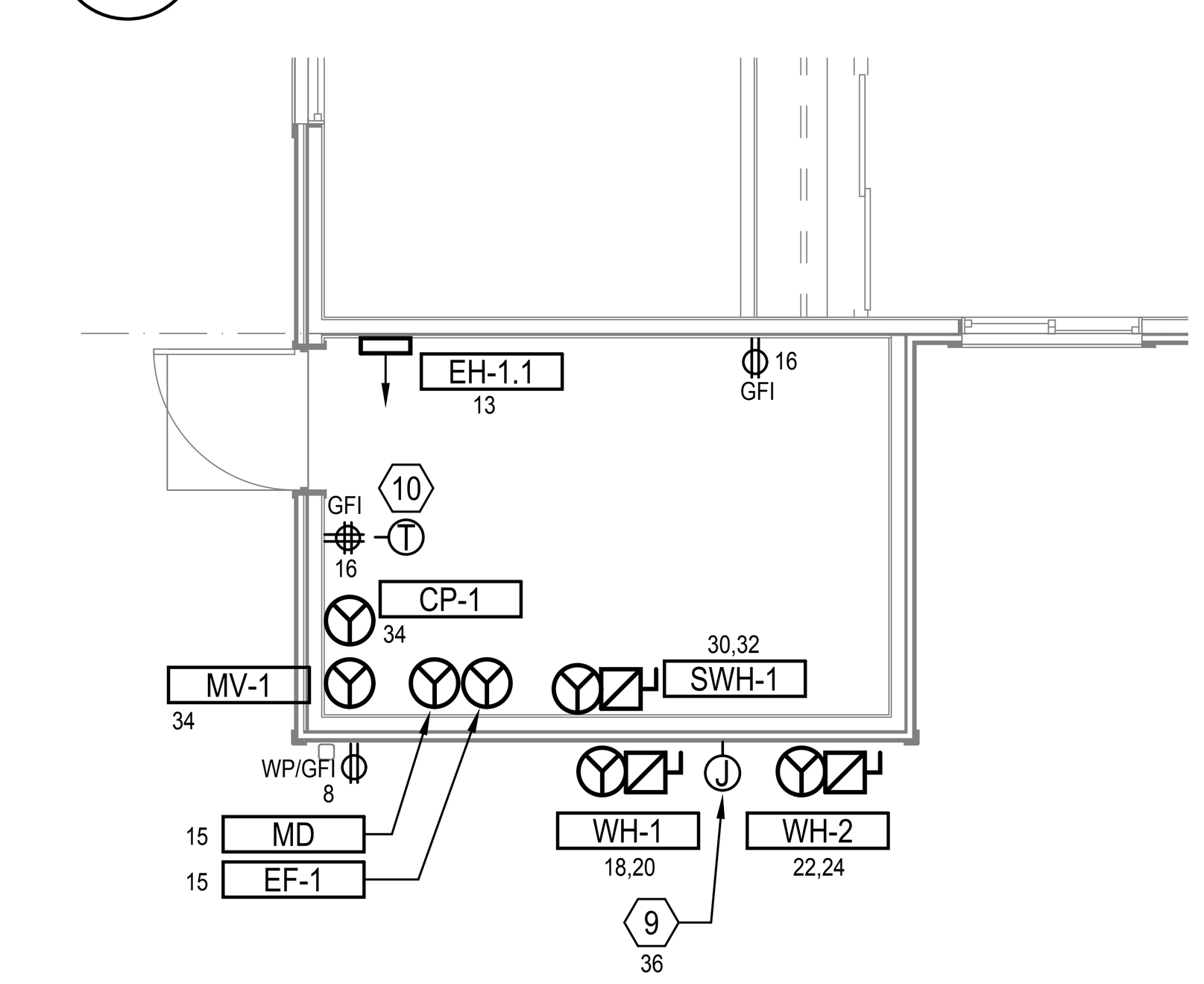
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.

10. ELECTRICAL CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



2 ELECTRICAL ROOM

E1-101 1/4"=1'-0"



3 WATER ROOM

E1-101 1/4"=1'-0"

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St., Kirkland, WA 98034

BUILDING 1

BID SET

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POWER AND LIGHTING PLAN - BUILDING 1 - LEVEL 1

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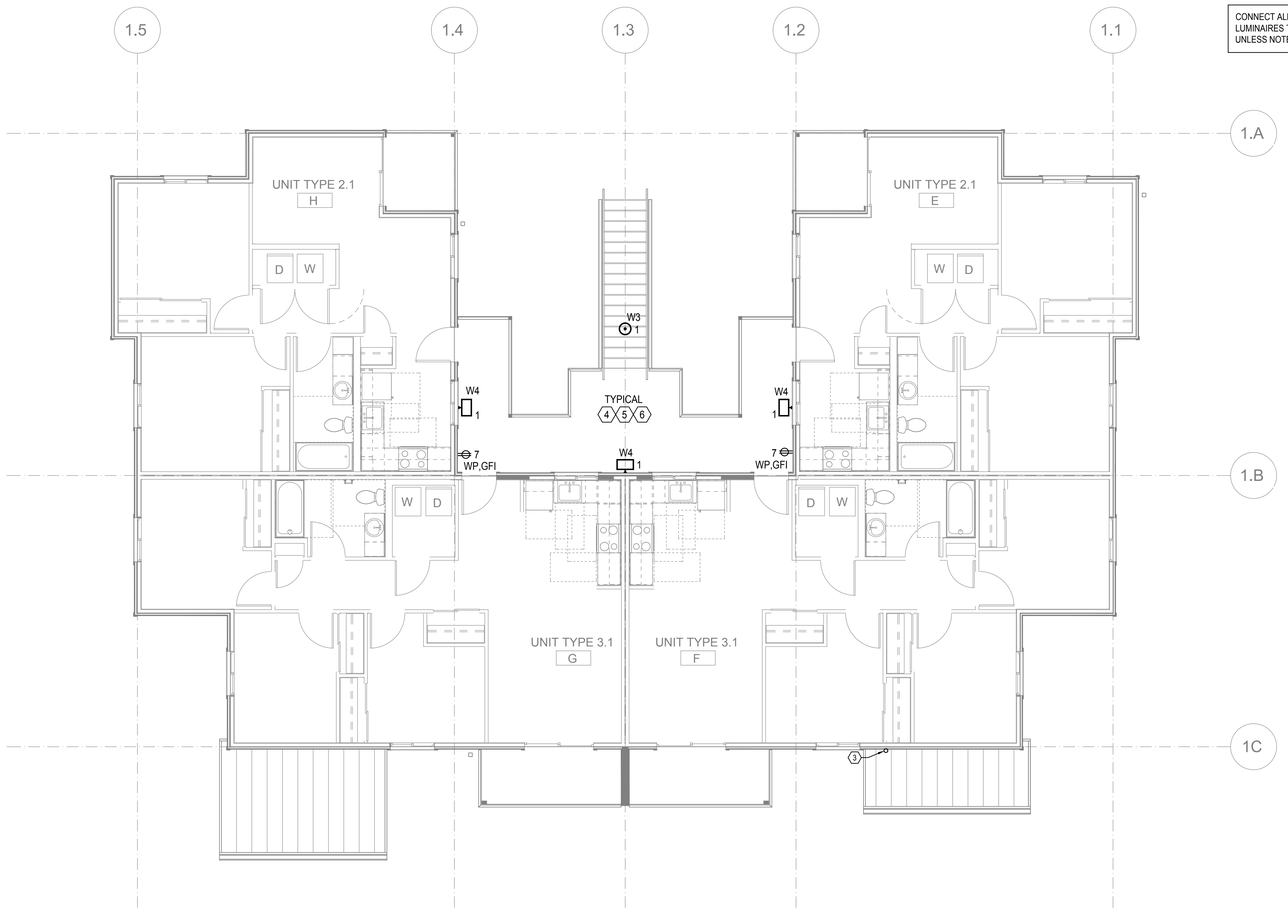

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H1 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. ALL BREEZEWAY AND STAIR LIGHTING TO BE FED BY EMERGENCY LIGHTING INVERTER. SEE LEVEL 1 PLAN FOR LOCATION AND DETAILS.
6. ALL BREEZEWAY LIGHTING TO HAVE AUTOMATIC ON/OFF CONTROL VIA TIME CLOCK. SEE LEVEL 1 PLAN FOR LOCATION.

POWER AND LIGHTING PLAN - BUILDING 1 - LEVEL 2

SCALE: 3/16"=1'-0"

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
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POWER AND LIGHTING PLAN - BUILDING 1 - LEVEL 2

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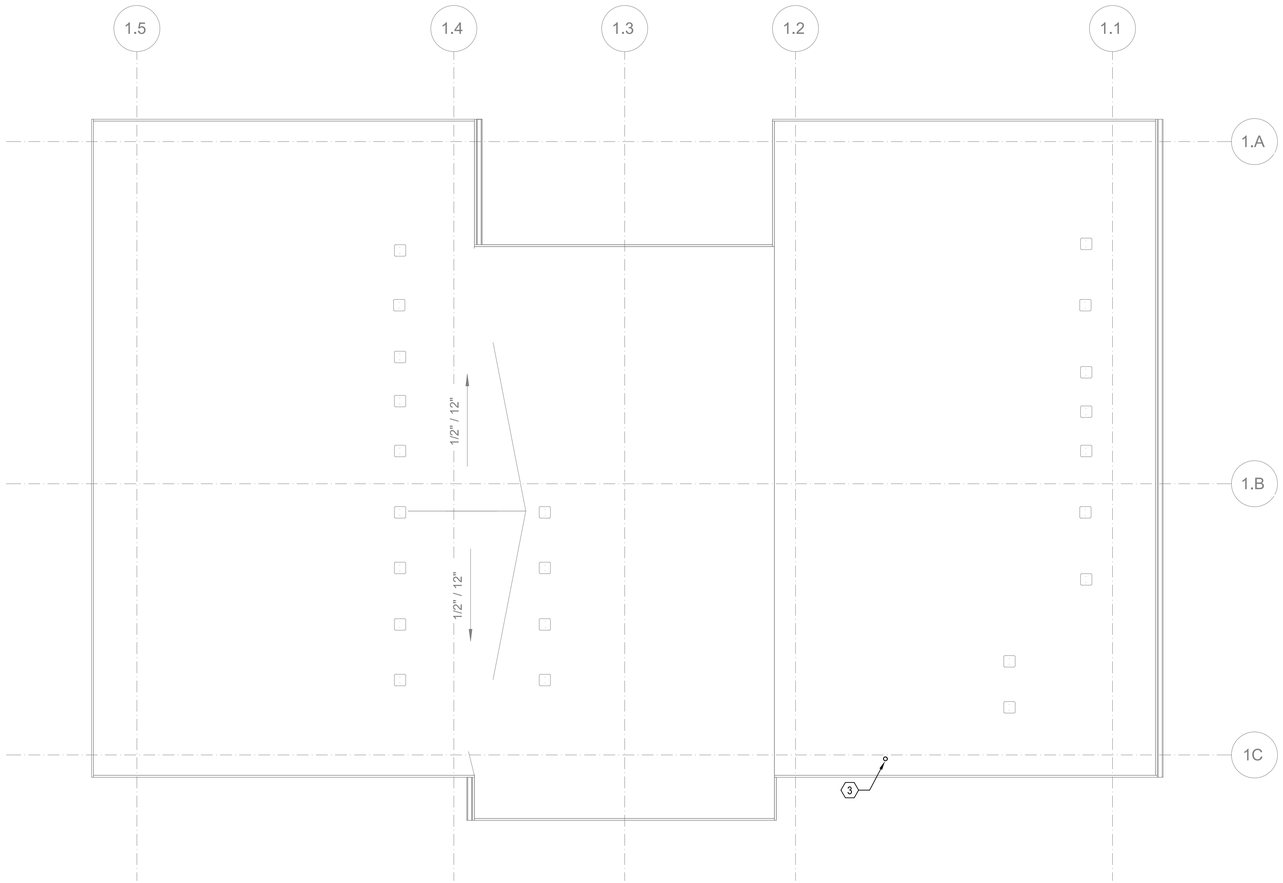


POWER PLAN - BUILDING 1 - ROOF

SCALE: 3/16"=1'-0"

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 1

BID SET

VIRGINNA M. [illegible] STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER PLAN - BUILDING 1 - ROOF

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016

SHEET NO.:

E1-103

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	CONDUCTORS PER SET: PHASE / NEUTRAL (N) (QTY) SIZE	CONDUCTORS PER SET: GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION);
CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

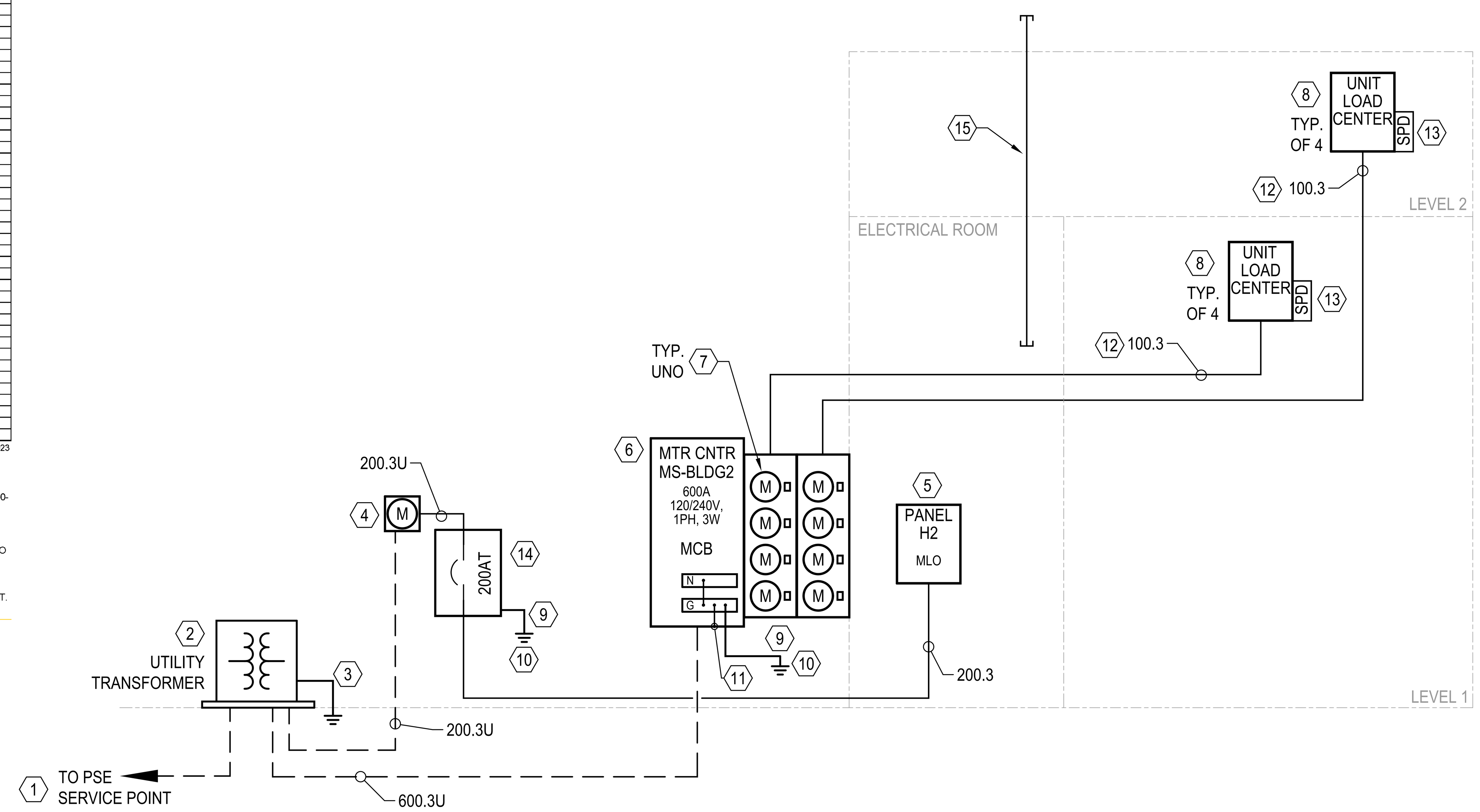
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE:NTS

FLAG NOTES ⓧ :

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (8) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 2

UNIT TYPE: 2BR - 2.1 — AREA (SF): 782 — 4/6/2023
DEMAND LOAD (kVA): 17.93 => 74.7 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	2.35	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2 CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1 CKTS x 1500VA	=	1.50	kVA
	SUBTOTAL (CONNECTED)	=	6.85	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:				
0 - 3,000VA:	100%	=	3.00	kVA
3,001VA - 120,000VA:	35%	=	1.35	kVA
> 120,000VA:	25%	=	0.00	kVA
	GENERAL LIGHTING LOAD - DEMAND	=	**4.35**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)			
REFRIGERATOR	1	AT	0.7	=	0.70	kVA
RANGE HOOD	1	AT	0.3	=	0.30	kVA
MICROWAVE		AT		=	0.00	kVA
DISHWASHER		AT		=	0.00	kVA
WASHER	1	AT	1.2	=	1.20	kVA
GARBAGE DISPOSAL		AT		=	0.00	kVA
WATER HEATER		AT		=	0.00	kVA
			SUBTOTAL (CONNECTED)	=	2.20	kVA
APPLIANCE DEMAND FACTOR [220.53]:			75%			
			GENERAL APPLIANCE LOAD - DEMAND	=	**1.65**	**kVA**

MOTORS [220.50]:

	QTY		LOAD (kVA EACH)			
TOILET EXHAUST FAN		AT		=	0.00	kVA
ERV UNIT	1	AT	0.11	=	0.11	kVA
KITCHEN EXHAUST FAN		AT		=	0.00	kVA
+25% OF LARGEST MOTOR				=	0.03	kVA
			GENERAL MOTOR LOAD - DEMAND	=	**0.14**	**kVA**
100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	3.91	kVA
	QTY		LOAD (kVA EACH)			
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50	kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00	kVA
ELECTRIC OVEN [220.55]		AT		=	0.00	kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00	kVA

TOTAL DWELLING UNIT LOAD PER NEC 220, PART III = 23.54 kVA

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.48	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	5.39	kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS; 65% NAMEPLATE	=	2.54	kVA

TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV = 17.93 kVA

UNIT TYPE: 3BR - 3.1 — AREA (SF): 906 — 4/6/2023
DEMAND LOAD (kVA): 18.49 => 77.0 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	2.72	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2 CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1 CKTS x 1500VA	=	1.50	kVA
	SUBTOTAL (CONNECTED)	=	7.22	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:				
0 - 3,000VA:	100%	=	3.00	kVA
3,001VA - 120,000VA:	35%	=	1.48	kVA
> 120,000VA:	25%	=	0.00	kVA
	GENERAL LIGHTING LOAD - DEMAND	=	**4.48**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)			
REFRIGERATOR	1	AT	0.7	=	0.70	kVA
RANGE HOOD	1	AT	0.3	=	0.30	kVA
MICROWAVE		AT		=	0.00	kVA
DISHWASHER		AT		=	0.00	kVA
WASHER	1	AT	1.2	=	1.20	kVA
GARBAGE DISPOSAL		AT		=	0.00	kVA
WATER HEATER		AT		=	0.00	kVA
			SUBTOTAL (CONNECTED)	=	2.20	kVA
APPLIANCE DEMAND FACTOR [220.53]:			75%			
			GENERAL APPLIANCE LOAD - DEMAND	=	**1.65**	**kVA**

MOTORS [220.50]:

	QTY		LOAD (kVA EACH)			
TOILET EXHAUST FAN		AT		=	0.00	kVA
ERV UNIT	1	AT	0.11	=	0.11	kVA
KITCHEN EXHAUST FAN		AT		=	0.00	kVA
+25% OF LARGEST MOTOR				=	0.03	kVA
			GENERAL MOTOR LOAD - DEMAND	=	**0.14**	**kVA**
100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	4.53	kVA
	QTY		LOAD (kVA EACH)			
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50	kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00	kVA
ELECTRIC OVEN [220.55]		AT		=	0.00	kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00	kVA

TOTAL DWELLING UNIT LOAD PER NEC 220, PART III = 24.29 kVA

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.86	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	5.54	kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS; 65% NAMEPLATE	=	2.94	kVA

TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV = 18.49 kVA

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL — MS - 8 unit STACK — 4/6/2023
DEMAND LOAD (kVA): 95.86 => 399.4 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS: QTY	CLOTHES DRYERS: LOAD (kVA)	COOKING 1.5< X < 3.5kW: QTY	COOKING 1.5< X < 3.5kW: LOAD (kVA)	COOKING 3.5kW < X < 8.75kW: QTY	COOKING 3.5kW < X < 8.75kW: LOAD (kVA)	COOKING 8.75kW < X < 12kW: QTY	COOKING 8.75kW < X < 12kW: LOAD (kVA)
2BR - 2.1	4	27.38	8.80	0.44	15.64	4	22.00	0	0.00	0	0.00	4	35.20
3BR - 3.1	4	28.87	8.80	0.44	18.12	4	22.00	0	0.00	0	0.00	4	35.20
0								0	0.00	0	0.00	0	0.00
TOTALS:	8	56.26	17.60	0.88	33.76	8	44.00	0	0.00	0	0.00	8	70.40
ADDITIONAL 25% OF LARGEST MOTOR:				0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD = 222.92 kVA
DEMAND FACTOR FROM TABLE 220.84 = 43%

TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC = 95.86 kVA

KIRKLAND HEIGHTS - 8 UNIT STACK FLAT (REHAB)
PRELIMINARY LOAD CALCULATIONS — 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 8):	95.86	kVA
(SEE ATTACHED CALCS)		
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.		
RESIDENTIAL TOTAL:	95.86	kVA
	399.40	AMPS @ 120/240V, 1-PHASE
	PROVIDE 600A RESIDENTIAL METER CENTER	

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):		
LIGHTING - Breezeway +Interior:	1.5	kVA
LIGHTING - SITE:	1.5	kVA
GENERAL RECEPTACLES:	4.0	kVA
MECHANICAL:	1.0	kVA
ELECT HEAT (WATER RMS):	1.0	KVA
CENTRAL HOT WATER (HPWH)	5.6	KVA
ELECT SWING TANK	4.5	KVA
HEAT TRACE	0.5	kVA
MISCELLANEOUS:	2.5	kVA
EV CHARGING (2):	16.6	kVA
HOUSE TOTAL:	38.71	kVA
	161.30	AMPS @ 120/240V, 1-PHASE
WITH 25% SPARE CAPACITY	48.39	kVA
	201.6208	AMPS @ 120/240V, 1-PHASE
	PROVIDE 200A HOUSE SERVICE	
TOTAL BUILDING SERVICE:	144.25	kVA
	601.03	AMPS @ 120/240V, 1-PHASE

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS
13317 NE 133rd St., Kirkland, WA 98034

BUILDING 2
BID SET

GEORGINA M. [illegible] STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE
SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	E2-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	CONDUCTORS PER SET PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILITY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.
B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H2 — FED FROM: XFR — LOCATION: ELECTRICAL ROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 200 AMPS — M.L.O. OR MCB: MLO — 200 AMPS

CKT #	DESCRIPTION	CONN LOAD TYPE	kVA	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	CONN LOAD TYPE	kVA	DESCRIPTION	CKT #
1	T/G - BREEZEWAY	L	0.15	20.1	20 / 1	A	20 / 1	20.1	N	0.80	FIRE ALARM CONTROL PANEL	2
3	SPARE		0.00		20 / 1	B	20 / 1	20.1	N	0.24	LTG TIME CLOCK	4
5	RECEPT - LVL 1 BREEZEWAY	R	0.36	20.1	20 / 1	A	20 / 1			0.00	SPARE	6
7	RECEPT - LVL 2 BREEZEWAY	R	0.36	20.1	20 / 1	B	20 / 1	20.1	R	0.54	RECEPTS - ELECT RM	8
9	SPARE		0.00		20 / 1	A	20 / 1	20.1	R	0.72	RECEPTS - TELECOM	10
11	LTG - ELECT / MECH CLOSETS	L	0.24	20.1	20 / 1	B	20 / 1	20.1	R	0.36	RECEPTS - TELECOM	12
13	ELECT HEATER - FIRE SPRINKLER	C	1.50	20.1	20 / 1	A	20 / 1			0.00	SPARE	14
15	EXHAUST FAN (EF-1 & MOTO DAMPER	M	0.24	20.1	20 / 1	B	20 / 1	20.1	R	0.72	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-1	18
19	SPARE		0.00		20 / 1	B						20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20.1	20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-2	22
23	SPARE		0.00		20 / 1	B						24
25	SPARE		0.00		20 / 1	A	20 / 1			0.00	SPARE	26
27	SPARE		0.00		20 / 1	B	20 / 1			0.00	SPARE	28
29	SPACE ONLY					A	30 / 2	30.2N	C	4.50	WH SWING TANK - SWH-1	30
31	SPACE ONLY					B						32
33	SPACE ONLY					A	20 / 1	20.1	N	0.36	CIRC PUMP CP-1 & MIX VALVE - MV-1	34
35	SPACE ONLY					B	20 / 1	20.1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

		CONNECTED LOAD		DEMAND FACTOR	DEMAND LOAD	
L	= LIGHTING	0.39	kVA	125%	0.49	kVA
R	= RECEPTACLES	3.78	kVA	NEC 220-44	3.78	kVA
M	= MOTORS	0.24	kVA	100%	0.24	kVA
	PLUS 25% OF LARGEST MOTOR	0.24	kVA	25%	0.06	kVA
C	= CONTINUOUS	9.46	kVA	125%	11.82	kVA
N	= NON-CONTINUOUS	1.44	kVA	100%	1.44	kVA
K	= KITCHEN	0.00	kVA	75%	0.00	kVA

PANEL CONNECTED TOTAL: 15.31 kVA / 63.78 AMPS
PANEL DEMAND TOTAL: 17.53 kVA / 74.29 AMPS

NOTES:
A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER.

LOAD CENTER - 2 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O. OR MCB: MLO — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN'L TG RECEPTS, BD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ENT, MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	DED RECEPT - AC UNIT (BY TENANT)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B				20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 5FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

LOAD CENTER - 3 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O. OR MCB: MLO — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN'L TG RECEPTS, BD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ENT, MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 5FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-1	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.163					2
			/						
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS. CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES. DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	240 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3

NOTES:

1. CONFIRM EXACT LOCATION WITH ARCHITECT.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 8 UNIT STACKED FLATS

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES BED 1	BED 2	BED 3	LIVING
A	2-BDRM	CH-0.84	CH-0.7		CH-1.8
B	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
C	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
D	2-BDRM	CH-0.84	CH-0.7		CH-1.8
E	2-BDRM	CH-0.7	CH-0.56		CH-1.12
F	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
G	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
H	2-BDRM	CH-0.7	CH-0.56		CH-1.12

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.
B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 2

BID SET

GEORGINNA M. BYERS — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

SCHEDULES

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	E2-004

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED. MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/830 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE & SPECS FOR ALL 'S' LIGHTING FIXTURES.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 2

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO DATE DESCRIPTION

DPD STAMP

TITLE

LUMINAIRE SCHEDULE

PERMIT #	
DRAWN	RA, JF
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ISSUE DATE	4/14/2023
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SHEET NO.:	

E2-005

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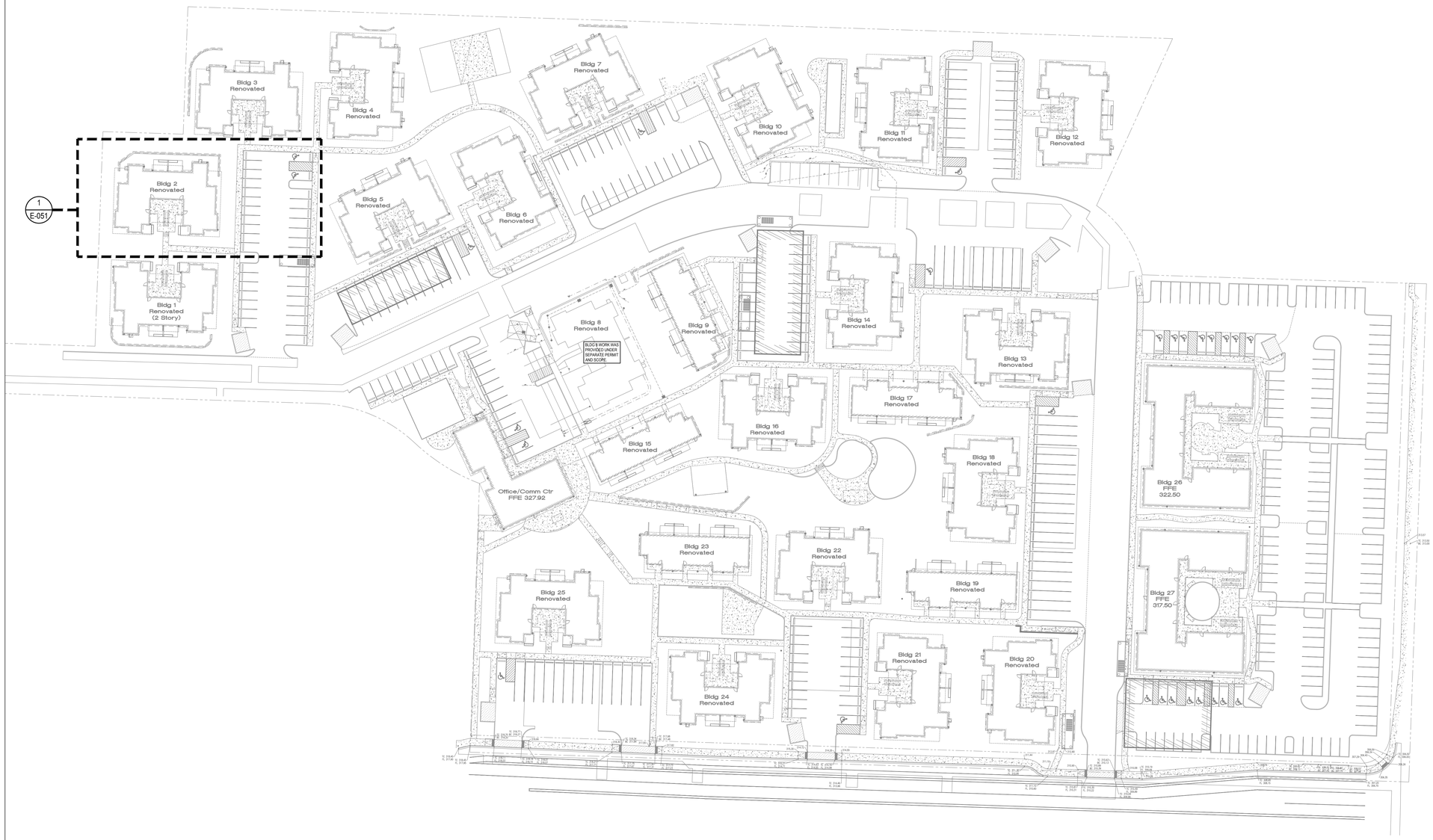

OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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BUILDING 2

BID SET

PROGINNA M. JOHNSON
STATE OF WASHINGTON
43761
REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

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OVERALL PROJECT SITE PLAN

PERMIT #	
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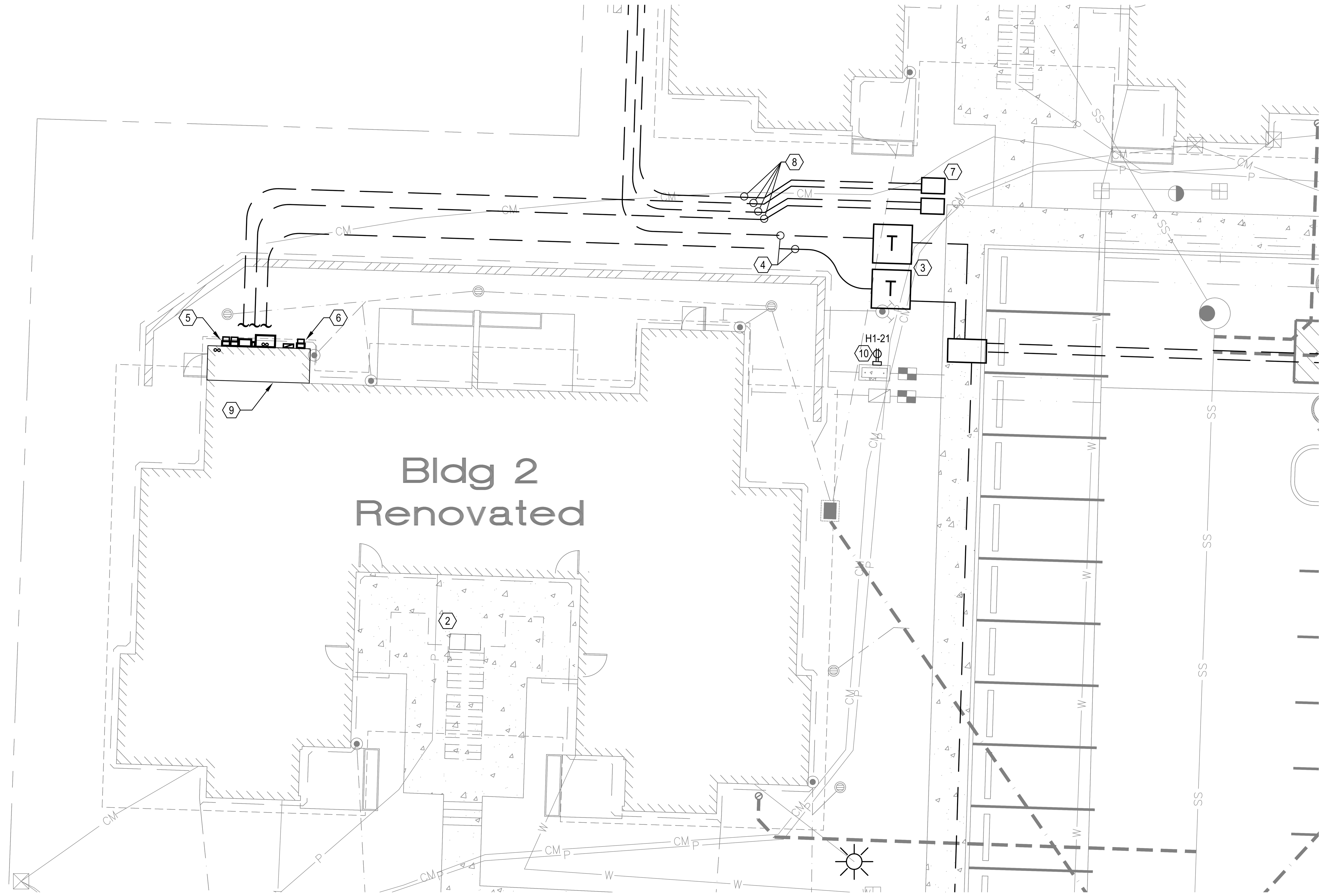
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E2-050

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.



ELECTRICAL SITE PLAN - BUILDING 2

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

FLAG NOTES ⟨X⟩:

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

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SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 2

BID SET

GEORGINNA M. L... STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

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ELECTRICAL SITE PLAN - BUILDING 2

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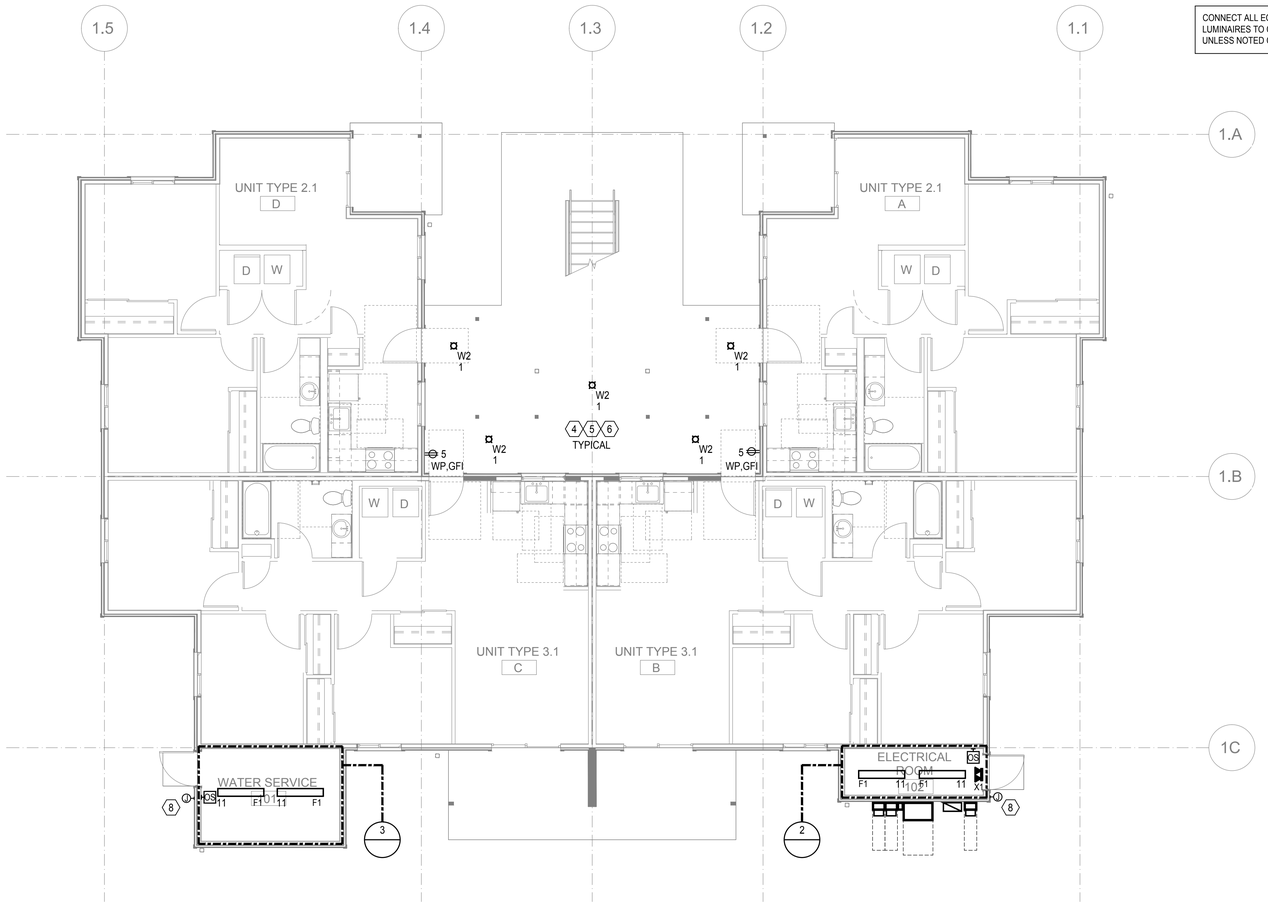


POWER AND LIGHTING PLAN - BUILDING 2 - LEVEL 1

SCALE: 3/16"=1'-0"

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H2 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

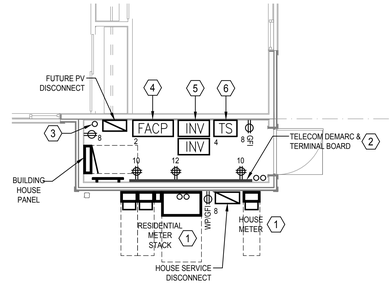
B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

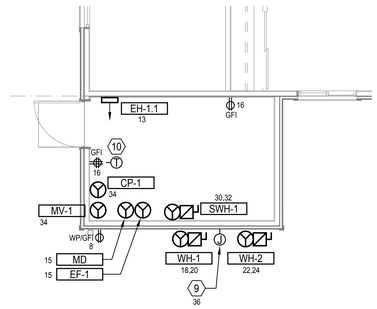
FLAG NOTES (X):

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.
2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 220 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR LIGHTING FIXTURES TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-220-PB-S-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.
7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.
8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.
10. ELECTRICAL CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



2 E101 ELECTRICAL ROOM

1/4"=1'-0"



3 E101 WATER ROOM

1/4"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
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Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 2

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

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TITLE

POWER AND LIGHTING PLAN - BUILDING 2 - LEVEL 1

PERMIT #	
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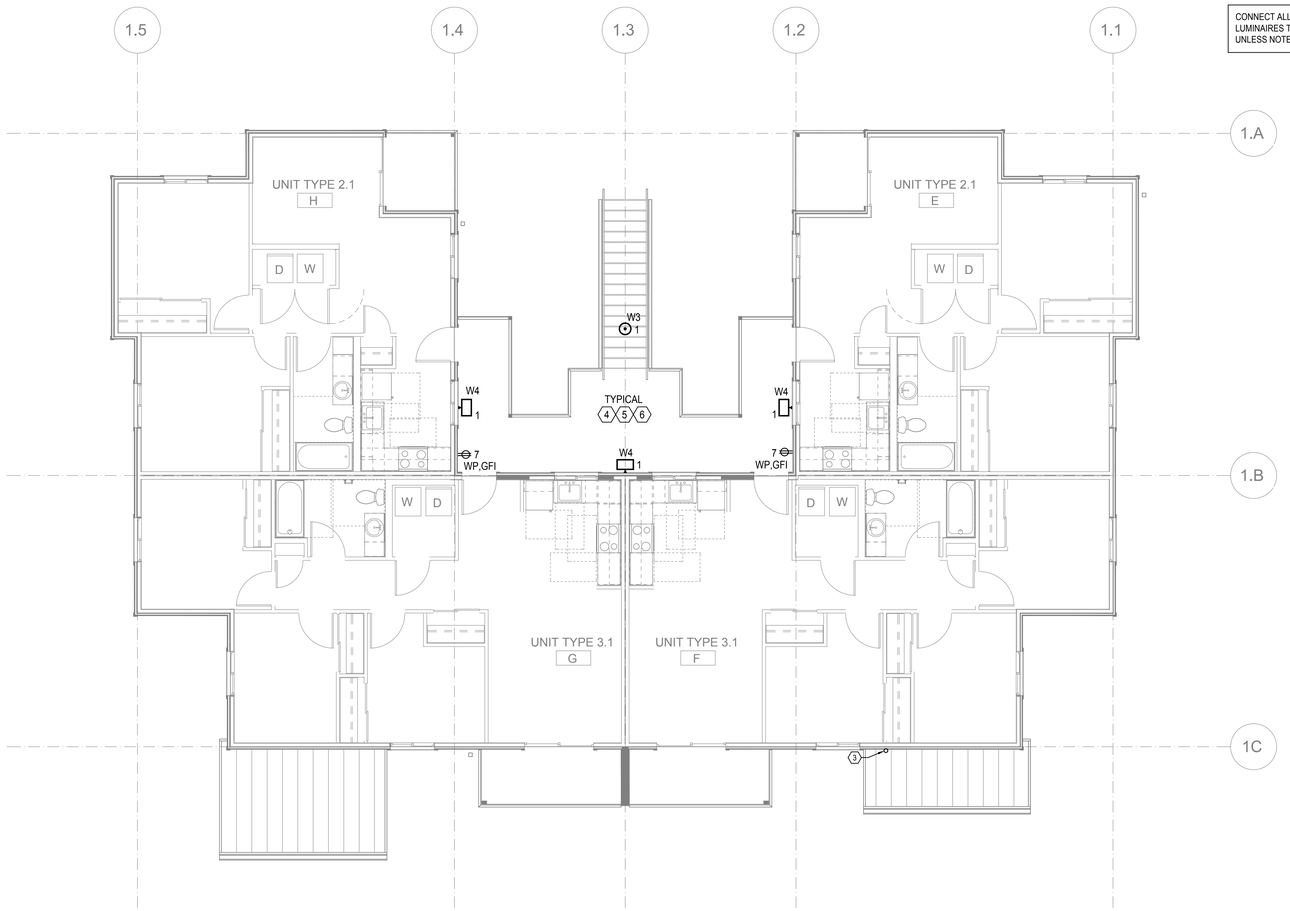

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H2 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. ALL BREEZEWAY AND STAIR LIGHTING TO BE FED BY EMERGENCY LIGHTING INVERTER. SEE LEVEL 1 PLAN FOR LOCATION AND DETAILS.
6. ALL BREEZEWAY LIGHTING TO HAVE AUTOMATIC ON/OFF CONTROL VIA TIME CLOCK. SEE LEVEL 1 PLAN FOR LOCATION.

POWER AND LIGHTING PLAN - BUILDING 2 - LEVEL 2

SCALE: 3/16"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
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Seattle, WA 98104

PH: 206.623.1104
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King County Housing Authority

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13310 NE 133rd St.
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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 2

BID SET

REVISIONS / NOTES

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POWER AND LIGHTING PLAN - BUILDING 2 - LEVEL 2

PERMIT #	
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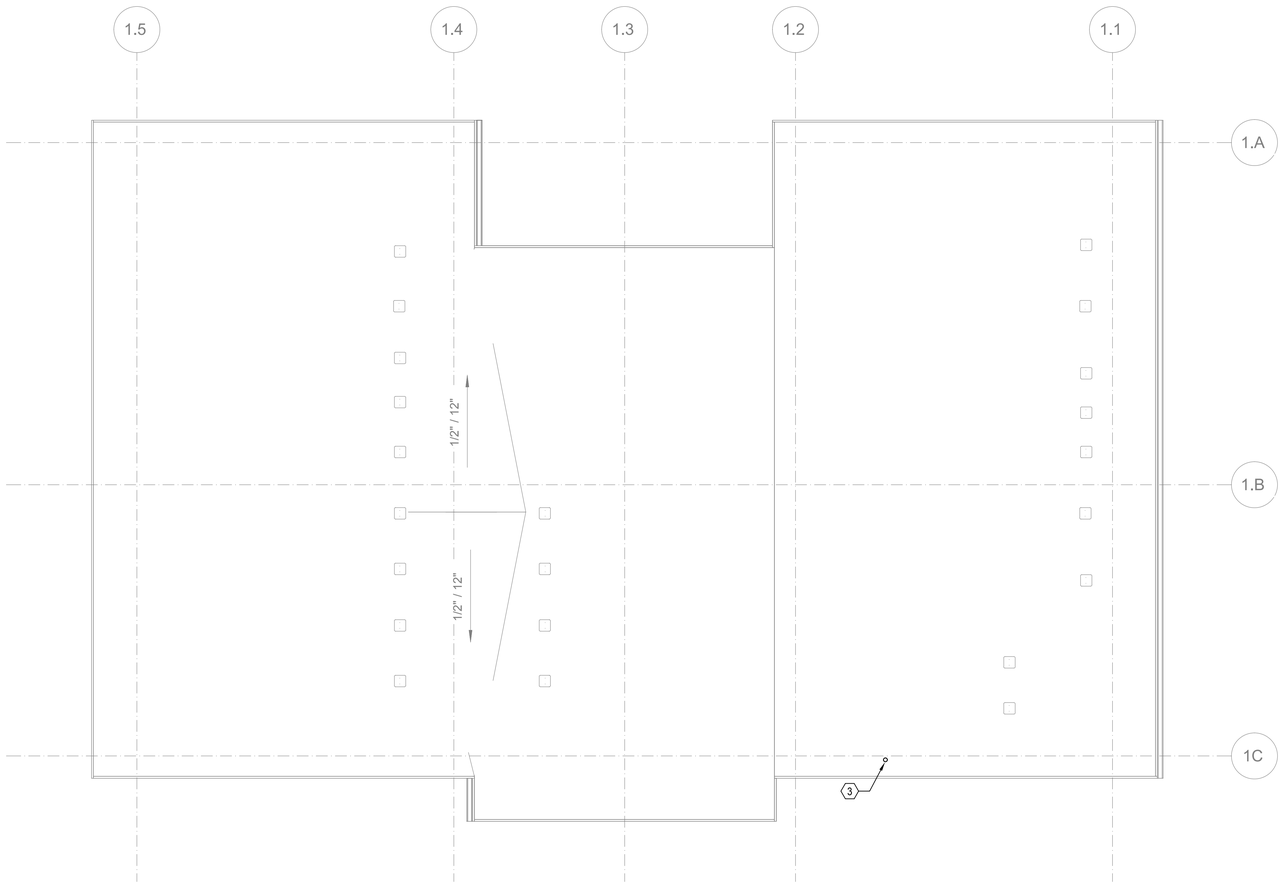

POEWR PLAN - BUILDING 2 - ROOF

SCALE: 3/16"=1'-0"

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

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BUILDING 2

BID SET

VIRGINNA M. [illegible] STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

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POWER PLAN - BUILDING 2 - ROOF

PERMIT #	
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JOB NO.	22016

SHEET NO.:

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10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	CONDUCTORS PER SET: PHASE / NEUTRAL (N) (QTY) SIZE	CONDUCTORS PER SET: GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION);
CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

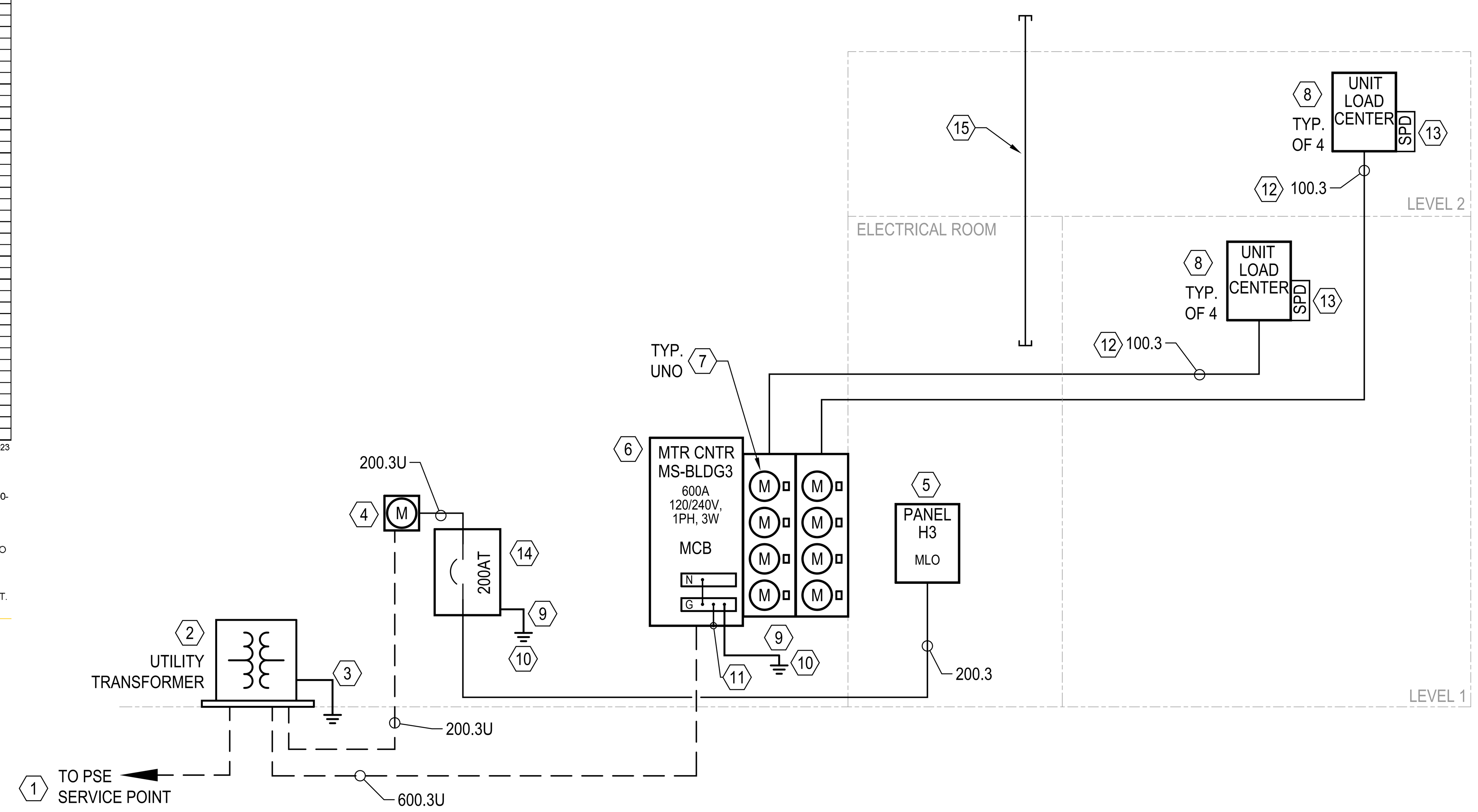
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE:NTS

FLAG NOTES ⓧ :

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (8) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 3

UNIT TYPE: 2BR - 2.1 **AREA (SF):** 782 — 4/6/2023
DEMAND LOAD (kVA): 17.93 => 74.7 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

Item	Qty		Load	=	Value	Unit
GENERAL LIGHTING LOADS [220.12] =			AREA x 3VA/SF	=	2.35	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2		CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1		CKTS x 1500VA	=	1.50	kVA
SUBTOTAL (CONNECTED)				=	6.85	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:						
0 - 3,000VA:			100%	=	3.00	kVA
3,001VA - 120,000VA:			35%	=	1.35	kVA
> 120,000VA:			25%	=	0.00	kVA
GENERAL LIGHTING LOAD - DEMAND				=	**4.35**	**kVA**
FIXED IN PLACE APPLIANCES [220.53]: TYPE	QTY		LOAD (kVA EACH)			
REFRIGERATOR	1	AT	0.7	=	0.70	kVA
RANGE HOOD	1	AT	0.3	=	0.30	kVA
MICROWAVE		AT		=	0.00	kVA
DISHWASHER		AT		=	0.00	kVA
WASHER	1	AT	1.2	=	1.20	kVA
GARBAGE DISPOSAL		AT		=	0.00	kVA
WATER HEATER		AT		=	0.00	kVA
SUBTOTAL (CONNECTED)				=	2.20	kVA
APPLIANCE DEMAND FACTOR [220.53]:			75%			
GENERAL APPLIANCE LOAD - DEMAND				=	**1.65**	**kVA**
MOTORS [220.50]:	QTY		LOAD (kVA EACH)			
TOILET EXHAUST FAN		AT		=	0.00	kVA
ERV UNIT	1	AT	0.11	=	0.11	kVA
KITCHEN EXHAUST FAN		AT		=	0.00	kVA
+25% OF LARGEST MOTOR				=	0.03	kVA
GENERAL MOTOR LOAD - DEMAND				=	**0.14**	**kVA**
100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	3.91	kVA
	QTY		LOAD (kVA EACH)			
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50	kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00	kVA
ELECTRIC OVEN [220.55]		AT		=	0.00	kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00	kVA
TOTAL DWELLING UNIT LOAD PER NEC 220, PART III				=	**23.54**	**kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

Item	Factor	=	Value	Unit
TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.48	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	5.39	kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS; 65% NAMEPLATE	=	2.54	kVA
TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV		=	**17.93**	**kVA**

UNIT TYPE: 3BR - 3.1 **AREA (SF):** 906 — 4/6/2023
DEMAND LOAD (kVA): 18.49 => 77.0 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

Item	Qty		Load	=	Value	Unit
GENERAL LIGHTING LOADS [220.12] =			AREA x 3VA/SF	=	2.72	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2		CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1		CKTS x 1500VA	=	1.50	kVA
SUBTOTAL (CONNECTED)				=	7.22	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:						
0 - 3,000VA:			100%	=	3.00	kVA
3,001VA - 120,000VA:			35%	=	1.48	kVA
> 120,000VA:			25%	=	0.00	kVA
GENERAL LIGHTING LOAD - DEMAND				=	**4.48**	**kVA**
FIXED IN PLACE APPLIANCES [220.53]: TYPE	QTY		LOAD (kVA EACH)			
REFRIGERATOR	1	AT	0.7	=	0.70	kVA
RANGE HOOD	1	AT	0.3	=	0.30	kVA
MICROWAVE		AT		=	0.00	kVA
DISHWASHER		AT		=	0.00	kVA
WASHER	1	AT	1.2	=	1.20	kVA
GARBAGE DISPOSAL		AT		=	0.00	kVA
WATER HEATER		AT		=	0.00	kVA
SUBTOTAL (CONNECTED)				=	2.20	kVA
APPLIANCE DEMAND FACTOR [220.53]:			75%			
GENERAL APPLIANCE LOAD - DEMAND				=	**1.65**	**kVA**
MOTORS [220.50]:	QTY		LOAD (kVA EACH)			
TOILET EXHAUST FAN		AT		=	0.00	kVA
ERV UNIT	1	AT	0.11	=	0.11	kVA
KITCHEN EXHAUST FAN		AT		=	0.00	kVA
+25% OF LARGEST MOTOR				=	0.03	kVA
GENERAL MOTOR LOAD - DEMAND				=	**0.14**	**kVA**
100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	4.53	kVA
	QTY		LOAD (kVA EACH)			
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50	kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00	kVA
ELECTRIC OVEN [220.55]		AT		=	0.00	kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00	kVA
TOTAL DWELLING UNIT LOAD PER NEC 220, PART III				=	**24.29**	**kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

Item	Factor	=	Value	Unit
TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.86	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	5.54	kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS; 65% NAMEPLATE	=	2.94	kVA
TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV		=	**18.49**	**kVA**

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL — MS - 8 unit STACK — 4/6/2023
DEMAND LOAD (kVA): 95.86 => 399.4 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING 1.5< X < 3.5kW QTY	COOKING 1.5< X < 3.5kW LOAD (kVA)	COOKING 3.5kW < X < 8.75kW QTY	COOKING 3.5kW < X < 8.75kW LOAD (kVA)	COOKING 8.75kW < X < 12kW QTY	COOKING 8.75kW < X < 12kW LOAD (kVA)
2BR - 2.1	4	27.38	8.80	0.44	15.64	4	22.00	0	0.00	0	0.00	4	35.20
3BR - 3.1	4	28.87	8.80	0.44	18.12	4	22.00	0	0.00	0	0.00	4	35.20
0								0	0.00	0	0.00	0	0.00
TOTALS:	8	56.26	17.60	0.88	33.76	8	44.00	0	0.00	0	0.00	8	70.40
ADDITIONAL 25% OF LARGEST MOTOR:				0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD = 222.92 kVA
DEMAND FACTOR FROM TABLE 220.84 = 43%

TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC = 95.86 kVA

KIRKLAND HEIGHTS - 8 UNIT STACK FLAT (REHAB)

PRELIMINARY LOAD CALCULATIONS — 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 8):	95.86	kVA
(SEE ATTACHED CALCS)		
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.		
RESIDENTIAL TOTAL:	95.86	kVA
	399.40	AMPS @ 120/240V, 1-PHASE
	PROVIDE 600A RESIDENTIAL METER CENTER	

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):		
LIGHTING - Breezeway +Interior:	1.5	kVA
LIGHTING - SITE:	1.5	kVA
GENERAL RECEPTACLES:	4.0	kVA
MECHANICAL:	1.0	kVA
ELECT HEAT (WATER RMS):	1.0	KVA
CENTRAL HOT WATER (HPWH)	5.6	KVA
ELECT SWING TANK	4.5	KVA
HEAT TRACE	0.5	kVA
MISCELLANEOUS:	2.5	kVA
EV CHARGING (2):	16.6	kVA
HOUSE TOTAL:	38.71	kVA
	161.30	AMPS @ 120/240V, 1-PHASE
WITH 25% SPARE CAPACITY	48.39	kVA
	201.6208	AMPS @ 120/240V, 1-PHASE
	PROVIDE 200A HOUSE SERVICE	
TOTAL BUILDING SERVICE:	144.25	kVA
	601.03	AMPS @ 120/240V, 1-PHASE

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 3

BID SET

GEORGINNA M. ... STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E3-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
		CONDUCTORS PER SET		
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

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CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED			
			#12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.

B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H3

FED FROM: XFR LOCATION: ELECTRICAL ROOM
NORMAL POWER VOLTAGE: 120 / 240 V 1-PHASE, 3-WIRE SURFACE-MOUNTED
AIC: SEE SINGLE-LINE DIAGRAM BUS RATING: 200 AMPS MLO OR MCB: MLO 200 AMPS

CKT #	DESCRIPTION	CONN LOAD TYPE	CONN LOAD kVA	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	CONN LOAD TYPE	CONN LOAD kVA	DESCRIPTION	CKT #
1	LTG - BREEZEWAY	L	0.15	20.1	20 / 1	A	20 / 1	20.1	N	0.60	FIRE ALARM CONTROL PANEL	2
3	SPARE		0.00		20 / 1	B	20 / 1	20.1	N	0.24	LTG TIME CLOCK	4
5	RECEPT - LVL 1 BREEZEWAY	R	0.36	20.1	20 / 1	A	20 / 1			0.00	SPARE	6
7	RECEPT - LVL 2 BREEZEWAY	R	0.36	20.1	20 / 1	B	20 / 1	20.1	R	0.54	RECEPTS - ELECT RM	8
9	SPARE		0.00		20 / 1	A	20 / 1	20.1	R	0.72	RECEPTS - TELECOM	10
11	LTG - ELECT / MECH CLOSETS	L	0.24	20.1	20 / 1	B	20 / 1	20.1	R	0.36	RECEPTS - TELECOM	12
13	ELECT HEATER - FIRE SPRINKLER	C	1.50	20.1	20 / 1	A	20 / 1			0.00	SPARE	14
15	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.24	20.1	20 / 1	B	20 / 1	20.1	R	0.72	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - 'WH-1'	18
19	SPARE		0.00		20 / 1	B					"	20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20.1	20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - 'WH-2'	22
23	SPARE		0.00		20 / 1	B					"	24
25	SPARE		0.00		20 / 1	A	20 / 1			0.00	SPARE	26
27	SPARE		0.00		20 / 1	B	20 / 1			0.00	SPARE	28
29	SPACE ONLY					A	30 / 2	30.2N	C	4.50	WH SWING TANK- 'SWH-1'	30
31	SPACE ONLY					B					"	32
33	SPACE ONLY					A	20 / 1	20.1	N	0.36	CIRC PUMP 'CP-1' & MIX VALVE 'MW-1'	34
35	SPACE ONLY					B	20 / 1	20.1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

	CONNECTED LOAD	DEMAND FACTOR	DEMAND LOAD
L = LIGHTING	0.39 kVA	125%	0.49 kVA
R = RECEPTACLES	3.78 kVA	NEC 220.44	3.78 kVA
M = MOTORS	0.24 kVA	100%	0.24 kVA
PLUS 25% OF LARGEST MOTOR	0.24 kVA	25%	0.06 kVA
C = CONTINUOUS	9.46 kVA	125%	11.82 kVA
N = NON-CONTINUOUS	1.44 kVA	100%	1.44 kVA
K = KITCHEN	0.00 kVA	75%	0.00 kVA

PANEL CONNECTED TOTAL:
15.31 kVA
63.78 AMPS

PANEL DEMAND TOTAL:
17.83 kVA
74.28 AMPS

NOTES:
A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER.

LOAD CENTER - 2 BEDROOM

FED FROM: METER STACKS LOCATION: DWELLING UNITS
NORMAL POWER VOLTAGE: 120 / 240 V 1-PHASE, 3-WIRE FLUSH-MOUNTED
AIC: SEE SINGLE-LINE DIAGRAM BUS RATING: 100 AMPS MLO OR MCB: MLO 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN LTG, RECEPTS, SD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ERV, MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	DED RECEPT - AC UNIT (BY TENANT)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B				20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

LOAD CENTER - 3 BEDROOM

FED FROM: METER STACKS LOCATION: DWELLING UNITS
NORMAL POWER VOLTAGE: 120 / 240 V 1-PHASE, 3-WIRE FLUSH-MOUNTED
AIC: SEE SINGLE-LINE DIAGRAM BUS RATING: 100 AMPS MLO OR MCB: MLO 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN LTG, RECEPTS, SD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ERV, MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
			ELECTRICAL CHARACTERISTICS						
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-1	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.163					2
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS; CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES; DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM. COORDINATE EXACT REQUIRMEMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	240 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3

NOTES:
1. CONFIRM EXACT LOCATION WITH ARCHITECT.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 8 UNIT STACKED FLATS

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES			
		BED 1	BED 2	BED 3	LIVING
A	2-BDRM	CH-0.84	CH-0.7		CH-1.8
B	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
C	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
D	2-BDRM	CH-0.84	CH-0.7		CH-1.8
E	2-BDRM	CH-0.7	CH-0.56		CH-1.12
F	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
G	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
H	2-BDRM	CH-0.7	CH-0.56		CH-1.12

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.
B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 3

BID SET

GEORGINNA M. LUCAS
STATE OF WASHINGTON
43761
REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED. MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/830 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE & SPECS FOR ALL 'S' LIGHTING FIXTURES.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St., Kirkland, WA 98034

BUILDING 3

BID SET

GEORGINNA M. L... STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

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LUMINAIRE SCHEDULE

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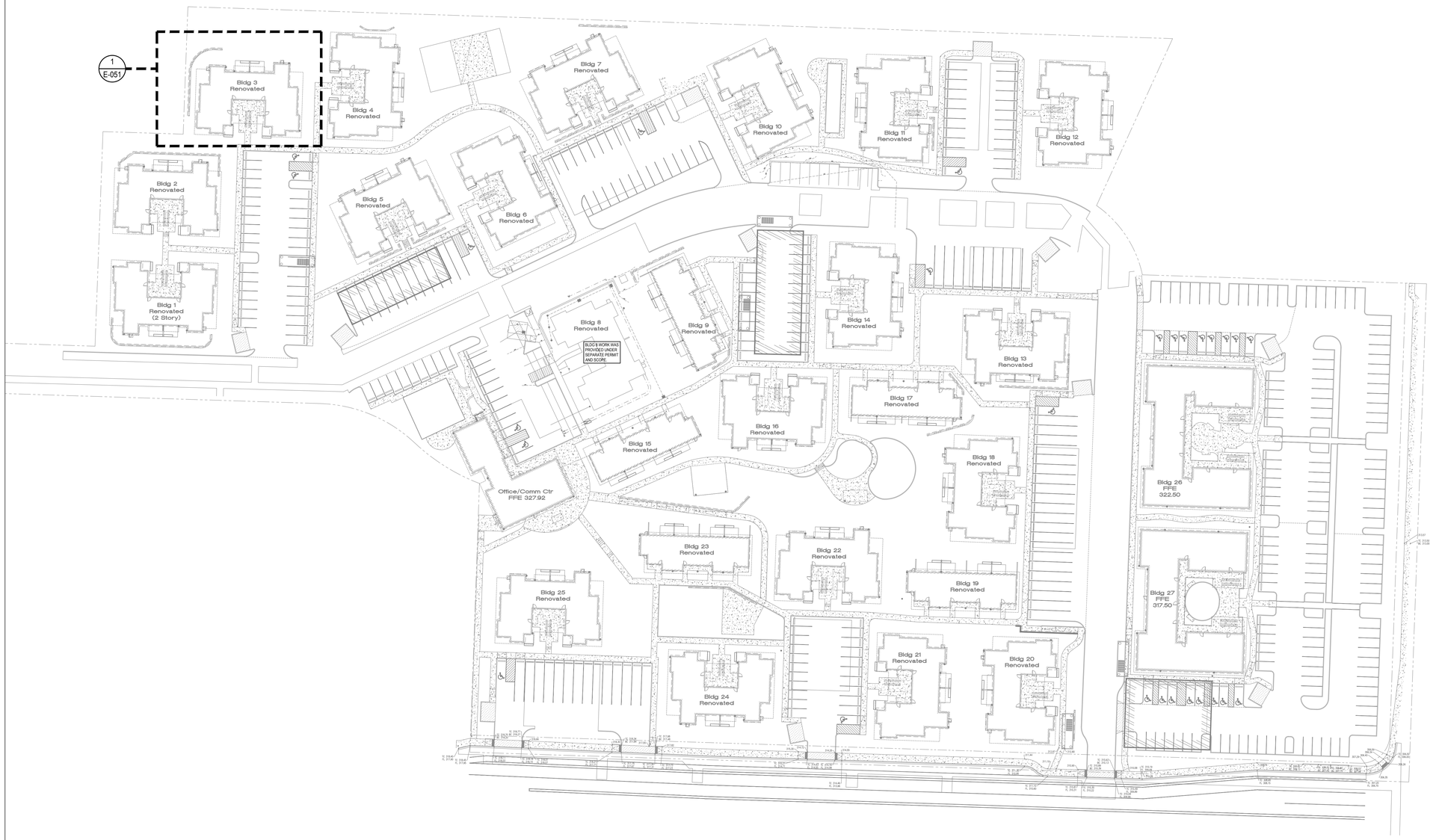

OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
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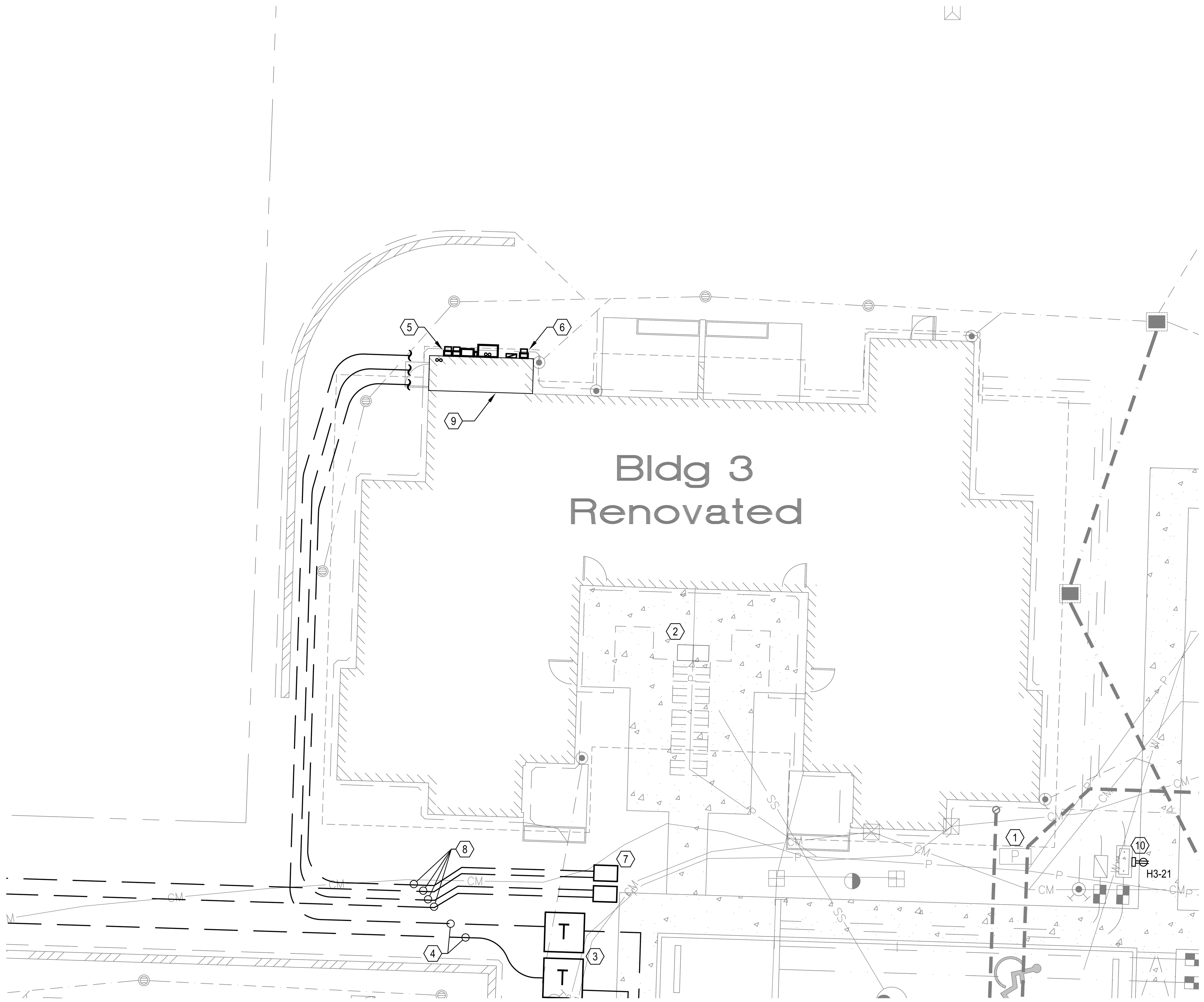
ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.



ELECTRICAL SITE PLAN - BUILDING 3

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

FLAG NOTES ⟨X⟩:

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 3

BID SET

NOT FOR CONSTRUCTION

GEORGINNA M. L... STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

ELECTRICAL SITE PLAN - BUILDING 3

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E3-051

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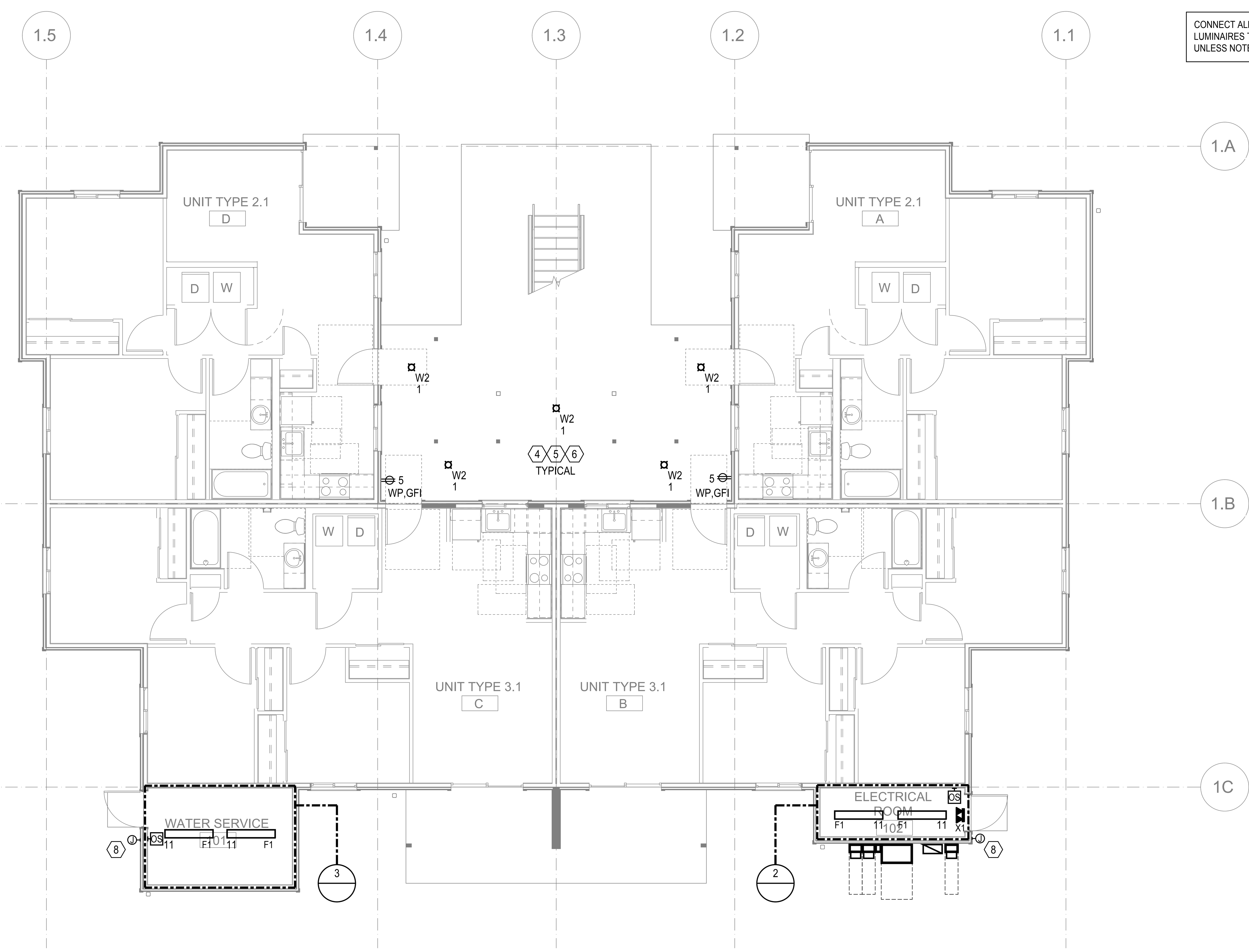


CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H3 UNLESS NOTED OTHERWISE.

POWER AND LIGHTING PLAN - BUILDING 3 - LEVEL 1

SCALE: 3/16"=1'-0"

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

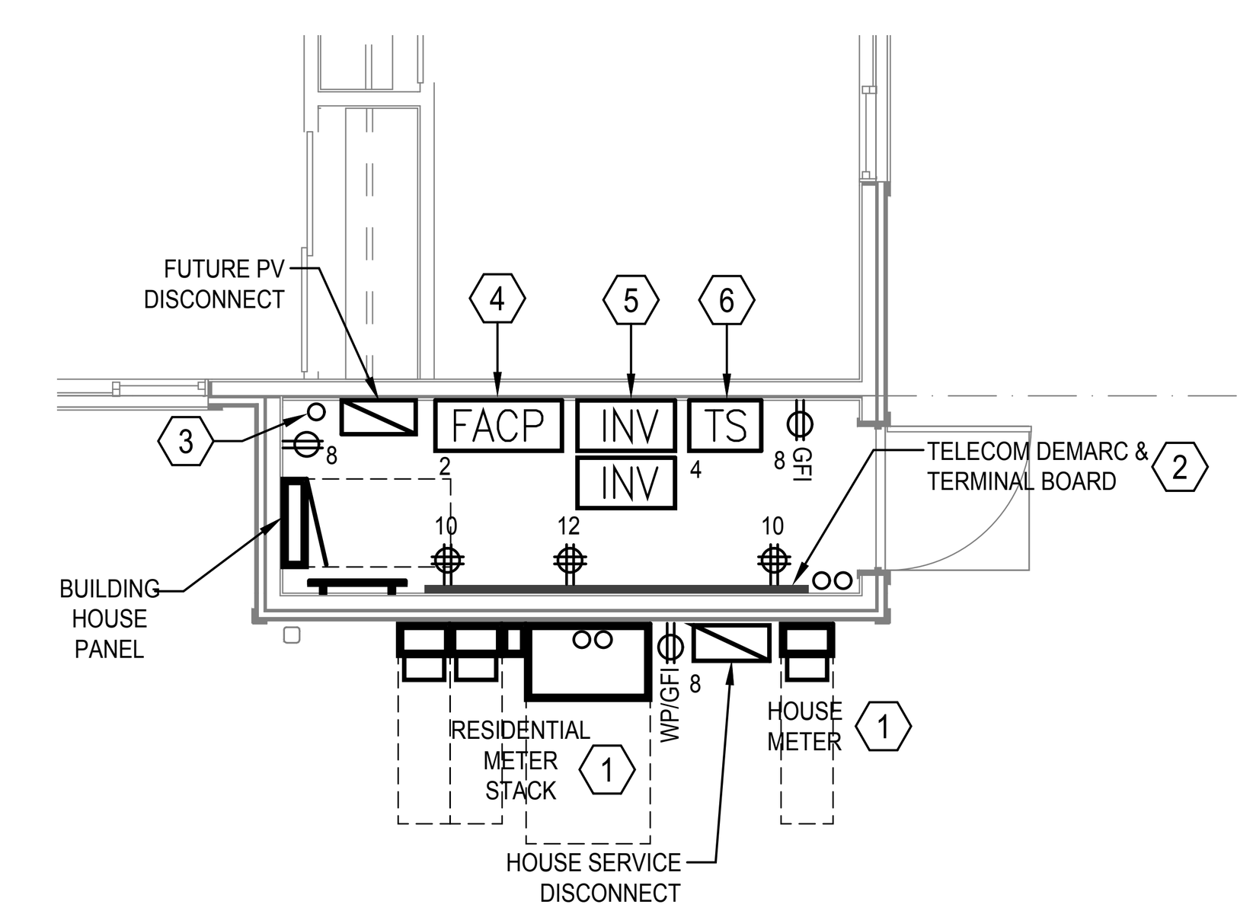
B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

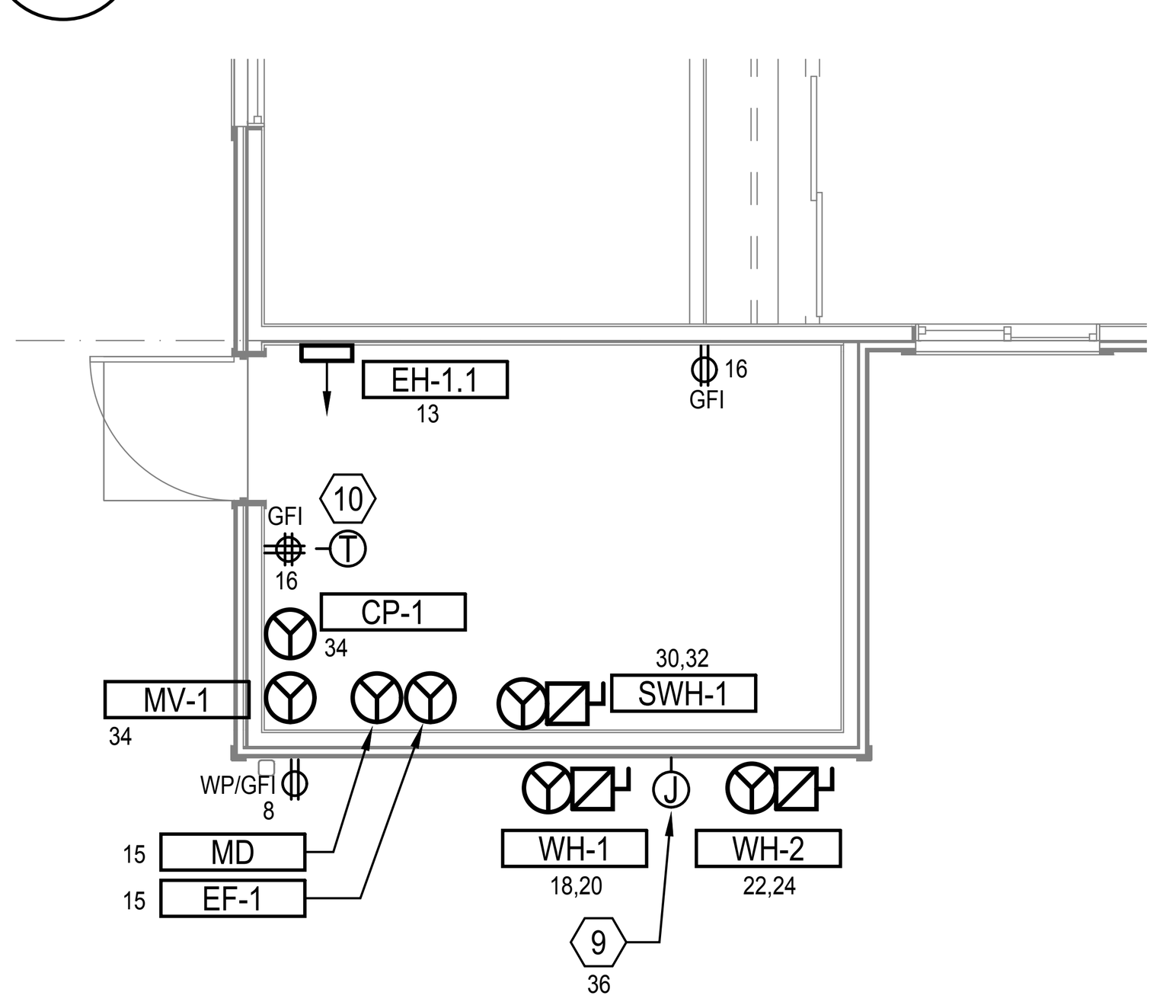
D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES ⟨X⟩:

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.
2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 220 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR LIGHTING FIXTURES TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-220-PB-S-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.
7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.
8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.
10. ELECTRICAL CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



2 E101 **ELECTRICAL ROOM**
1/4"=1'-0"



3 E101 **WATER ROOM**
1/4"=1'-0"

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MECHANICAL + ELECTRICAL ENGINEERS
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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS
13317 NE 133rd St., Kirkland, WA 98034

BUILDING 3
BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 3 - LEVEL 1

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E3-101

10/7/2021 7:33:34 AM

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SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

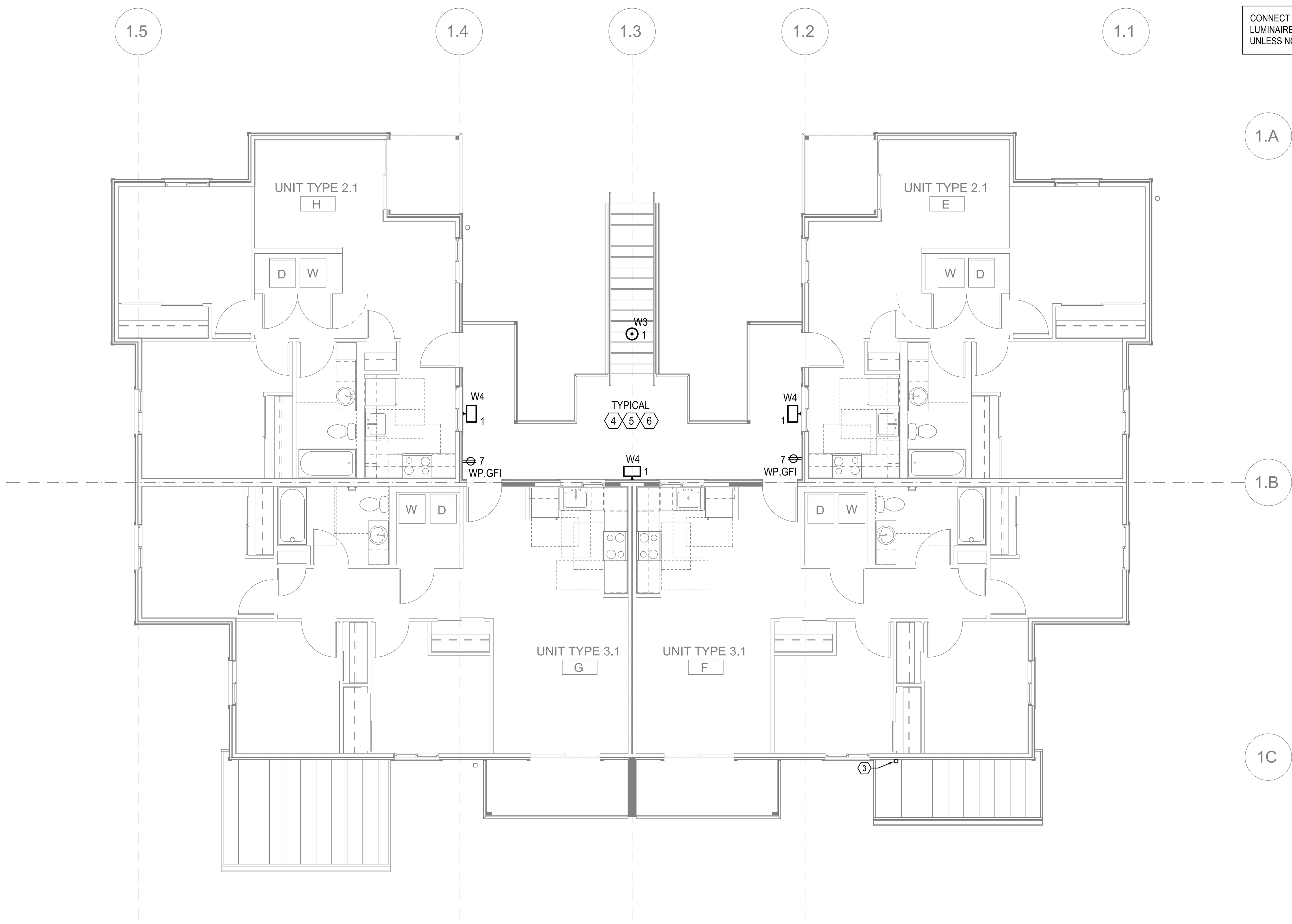
C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. ALL BREEZEWAY AND STAIR LIGHTING TO BE FED BY EMERGENCY LIGHTING INVERTER. SEE LEVEL 1 PLAN FOR LOCATION AND DETAILS.
6. ALL BREEZEWAY LIGHTING TO HAVE AUTOMATIC ON/OFF CONTROL VIA TIME CLOCK. SEE LEVEL 1 PLAN FOR LOCATION.

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H3 UNLESS NOTED OTHERWISE.



POWER AND LIGHTING PLAN - BUILDING 3 - LEVEL 2

SCALE: 3/16"=1'-0"

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
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Seattle, Washington 98109
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BUILDING 3

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

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POWER AND LIGHTING PLAN - BUILDING 3 - LEVEL 2

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E3-102

10/7/2021 7:33:34 AM

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

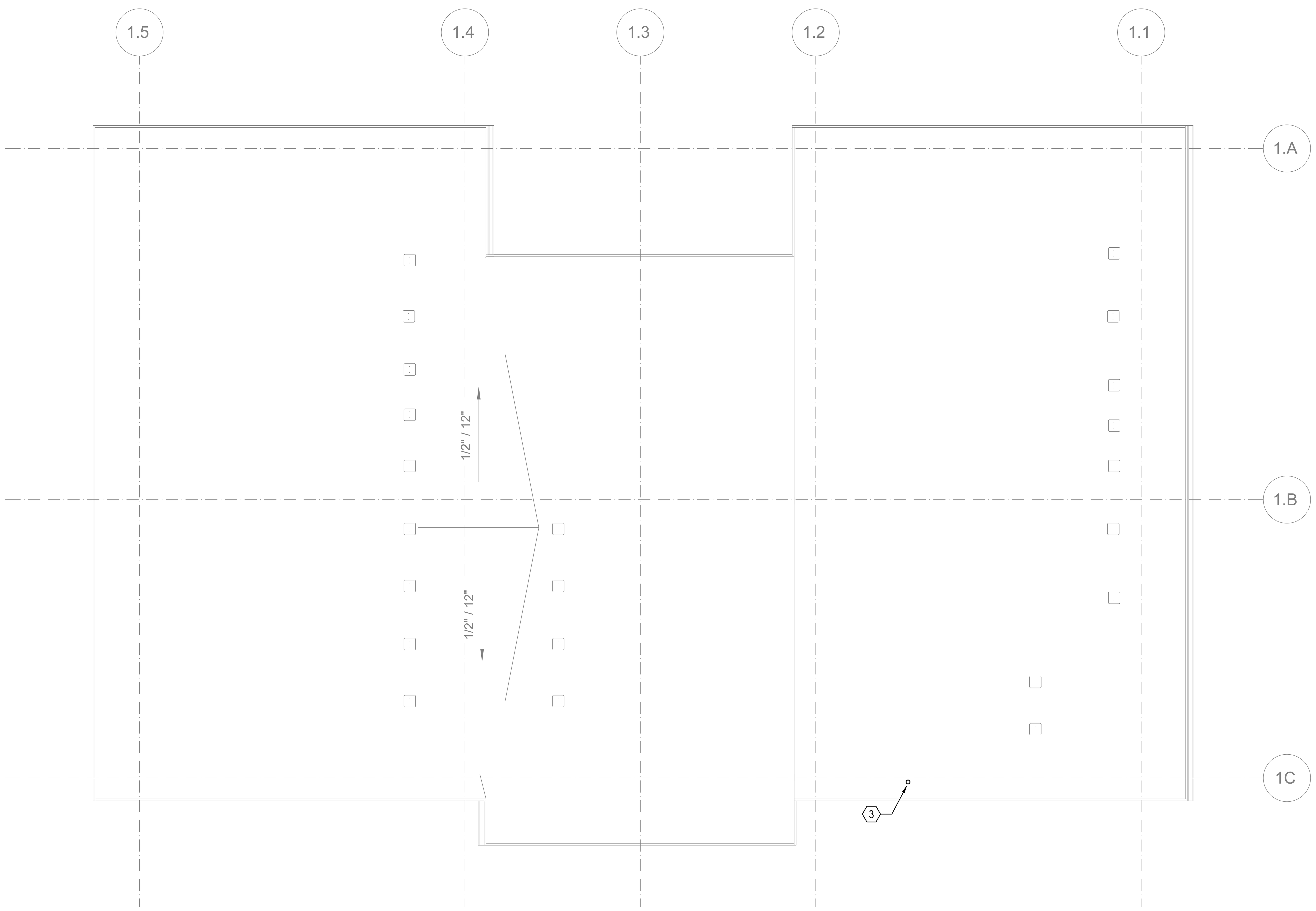
B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES ⟨X⟩:

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).



POWER PLAN - BUILDING 3 - ROOF

SCALE: 3/16"=1'-0"

SIDER + BYERS
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BUILDING 3

BID SET

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REVISIONS / NOTES

NO	DATE	DESCRIPTION

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POWER PLAN - BUILDING 3 - ROOF

PERMIT #	
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E3-103

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FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

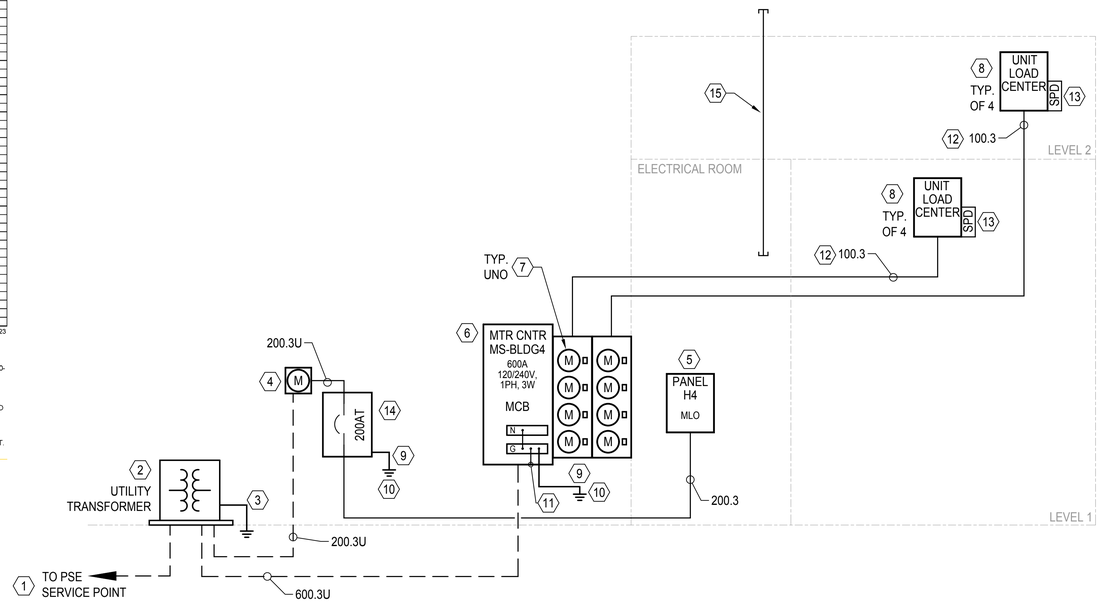
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS, WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH 'U' ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE: NTS

FLAG NOTES (X):

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (8) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 4

UNIT TYPE: 2BR - 2.1 | **AREA (SF): 782** | 4/6/2023

DEMAND LOAD (kVA): 17.93 => 74.7 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	2.35	kVA
SMALL-APPLIANCE CKTS [220.52(A)] = 2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] = 1	CKTS x 1500VA	=	1.50	kVA
	SUBTOTAL (CONNECTED)	=	6.85	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:				
0 - 3,000VA:	100%	=	3.00	kVA
3,001VA - 120,000VA:	35%	=	1.35	kVA
> 120,000VA:	25%	=	0.00	kVA
	GENERAL LIGHTING LOAD - DEMAND	=	**4.35**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:		75%			
		GENERAL APPLIANCE LOAD - DEMAND		=	**1.65 kVA**

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	**0.14 kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51] = 3.91 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA
		TOTAL DWELLING UNIT LOAD PER NEC 220, PART III		=	**23.54 kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.48	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10KVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	5.39	kVA

ELECTRIC HEAT AND AC [220.82(C)]:

LARGEST LOAD OF OPTIONS: < 4 ELECT SPACE HEATERS: 65% NAMEPLATE		=	2.54	kVA
	TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	**17.93**	**kVA**

UNIT TYPE: 3BR - 3.1 | **AREA (SF): 906** | 4/6/2023

DEMAND LOAD (kVA): 18.49 => 77.0 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	2.72	kVA
SMALL-APPLIANCE CKTS [220.52(A)] = 2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] = 1	CKTS x 1500VA	=	1.50	kVA
	SUBTOTAL (CONNECTED)	=	7.22	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:				
0 - 3,000VA:	100%	=	3.00	kVA
3,001VA - 120,000VA:	35%	=	1.48	kVA
> 120,000VA:	25%	=	0.00	kVA
	GENERAL LIGHTING LOAD - DEMAND	=	**4.48**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:		75%			
		GENERAL APPLIANCE LOAD - DEMAND		=	**1.65 kVA**

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	**0.14 kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51] = 4.53 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA
		TOTAL DWELLING UNIT LOAD PER NEC 220, PART III		=	**24.29 kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.86	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10KVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	5.54	kVA

ELECTRIC HEAT AND AC [220.82(C)]:

LARGEST LOAD OF OPTIONS: < 4 ELECT SPACE HEATERS: 65% NAMEPLATE		=	2.94	kVA
	TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	**18.49**	**kVA**

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL | **MS - 8 unit STACK** | 4/6/2023

DEMAND LOAD (kVA): 95.86 => 399.4 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING APPLIANCES 1.6< X < 3.6kW QTY	1.6< X < 3.6kW LOAD (kVA)	3.6kW < X < 8.76kW QTY	3.6kW < X < 8.76kW LOAD (kVA)	8.76kW < X < 12kW QTY	8.76kW < X < 12kW LOAD (kVA)
2BR - 2.1	4	27.38	8.80	0.44	15.64	4	22.00	0	0.00	0	0.00	4	35.20
3BR - 3.1	4	28.87	8.80	0.44	18.12	4	22.00	0	0.00	0	0.00	4	35.20
0								0	0.00	0	0.00	0	0.00
TOTALS:	8	56.26	17.60	0.88	33.76	8	44.00	0	0.00	0	0.00	8	70.40

ADDITIONAL 25% OF LARGEST MOTOR: 0.03

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD = 222.92 kVA

DEMAND FACTOR FROM TABLE 220.84 = 43%

TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC = 95.86 kVA

KIRKLAND HEIGHTS - 8 UNIT STACK FLAT (REHAB)

PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 8):	95.86 kVA
(SEE ATTACHED CALCS)	
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.	
RESIDENTIAL TOTAL:	95.86 kVA
	399.40 AMPS @ 120/240V, 1-PHASE
	PROVIDE 600A RESIDENTIAL METER CENTER

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):	
LIGHTING - Breezeway +Interior:	1.5 kVA
LIGHTING - SITE:	1.5 kVA
GENERAL RECEPTACLES:	4.0 kVA
MECHANICAL:	1.0 kVA
ELECT HEAT (WATER RMS):	1.0 kVA
CENTRAL HOT WATER (HPWH)	5.6 kVA
ELECT SWING TANK	4.5 kVA
HEAT TRACE	0.5 kVA
MISCELLANEOUS:	2.5 kVA
EV CHARGING (2):	16.6 kVA
HOUSE TOTAL:	38.71 kVA
	161.30 AMPS @ 120/240V, 1-PHASE
WITH 25% SPARE CAPACITY	48.39 kVA
	201.6208 AMPS @ 120/240V, 1-PHASE
	PROVIDE 200A HOUSE SERVICE
TOTAL BUILDING SERVICE:	144.25 kVA
	601.03 AMPS @ 120/240V, 1-PHASE

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 4

BID SET

JOHANNA M. [illegible] STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	E4-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	CONDUCTORS PER SET PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.
B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H4 — FED FROM: XFR — LOCATION: ELECTRICAL ROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 200 AMPS — M.L.O OR MCB: MLO — 200 AMPS

CKT #	DESCRIPTION	CONN TYPE	LOAD kVA	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	CONN TYPE	LOAD kVA	DESCRIPTION	CKT #
1	TG - BREEZEWAY	L	0.15	20.1	20 / 1	A	20 / 1	20.1	N	0.60	FIRE ALARM CONTROL PANEL	1
3	SPARE		0.00		20 / 1	B	20 / 1	20.1	N	0.24	LTG TIME CLOCK	4
5	RECEPT - LVL 1 BREEZEWAY	R	0.36	20.1	20 / 1	A	20 / 1			0.00	SPARE	6
7	RECEPT - LVL 2 BREEZEWAY	R	0.36	20.1	20 / 1	B	20 / 1	20.1	N	0.54	RECEPTS - ELECT RM	8
9	SPARE		0.00		20 / 1	A	20 / 1	20.1	R	0.72	RECEPTS - TELECOM	10
11	LTG - ELEC / MECH CLOSETS	L	0.24	20.1	20 / 1	B	20 / 1	20.1	R	0.36	RECEPTS - TELECOM	12
13	ELECT HEATER - FIRE SPRINKLER	C	1.50	20.1	20 / 1	A	20 / 1			0.00	SPARE	14
15	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.24	20.1	20 / 1	B	20 / 1	20.1	R	0.72	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-1	18
19	SPARE		0.00		20 / 1	B						20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20.1	20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-2	22
23	TG - SITE	L	0.06	20.1	20 / 1	B						24
25	SPARE		0.00		20 / 1	A	20 / 1			0.00	SPARE	26
27	SPARE		0.00		20 / 1	B	20 / 1			0.00	SPARE	28
29	SPACE ONLY					A	30 / 2	30.2N	C	4.50	WH SWING TANK - SWH-1	30
31	SPACE ONLY					B						32
33	SPACE ONLY					A	20 / 1	20.1	N	0.36	CIRC PUMP CP-1 & MIX VALVE V-MV-1	34
35	SPACE ONLY					B	20 / 1	20.1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

		CONNECTED LOAD	DEMAND FACTOR	DEMAND LOAD	
L	= LIGHTING	0.45	kVA 125%	0.56	kVA
R	= RECEPTACLES	3.78	kVA NEC 220.44	3.78	kVA
M	= MOTORS	0.24	kVA 100%	0.24	kVA
	PLUS 25% OF LARGEST MOTOR	0.24	kVA 25%	0.06	kVA
C	= CONTINUOUS	9.46	kVA 125%	11.82	kVA
N	= NON-CONTINUOUS	1.44	kVA 100%	1.44	kVA
K	= KITCHEN	0.00	kVA 75%	0.00	kVA

PANEL CONNECTED TOTAL: 15.37 kVA / 64.03 AMPS
PANEL DEMAND TOTAL: 17.50 kVA / 74.59 AMPS

NOTES:
A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER.

LOAD CENTER - 2 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O OR MCB: MLO — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN'L TG RECEPTS, BD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ENV. MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	DED RECEPT - AC UNIT (BY TENANT)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 5FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

LOAD CENTER - 3 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O OR MCB: MLO — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN'L TG RECEPTS, BD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ENV. MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	5
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	6
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 5FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS VOLTAGE/ PH	KW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-1	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.163					2
			/						
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS. CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES. DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	240 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3

NOTES:
1. CONFIRM EXACT LOCATION WITH ARCHITECT
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 8 UNIT STACKED FLATS

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES BED 1	BED 2	BED 3	LIVING
A	2-BDRM	CH-0.84	CH-0.7		CH-1.8
B	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
C	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
D	2-BDRM	CH-0.84	CH-0.7		CH-1.8
E	2-BDRM	CH-0.7	CH-0.56		CH-1.12
F	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
G	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
H	2-BDRM	CH-0.7	CH-0.56		CH-1.12

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.
B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 4

BID SET

VIRGINNA M. [illegible] — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

REVISIONS / NOTES

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED. MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/830 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE & SPECS FOR ALL 'S' LIGHTING FIXTURES.

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SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
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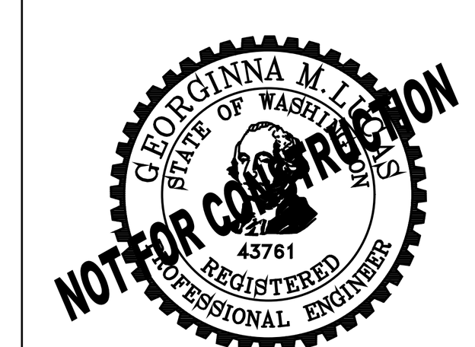
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St., Kirkland, WA 98034

BUILDING 4

BID SET



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LUMINAIRE SCHEDULE

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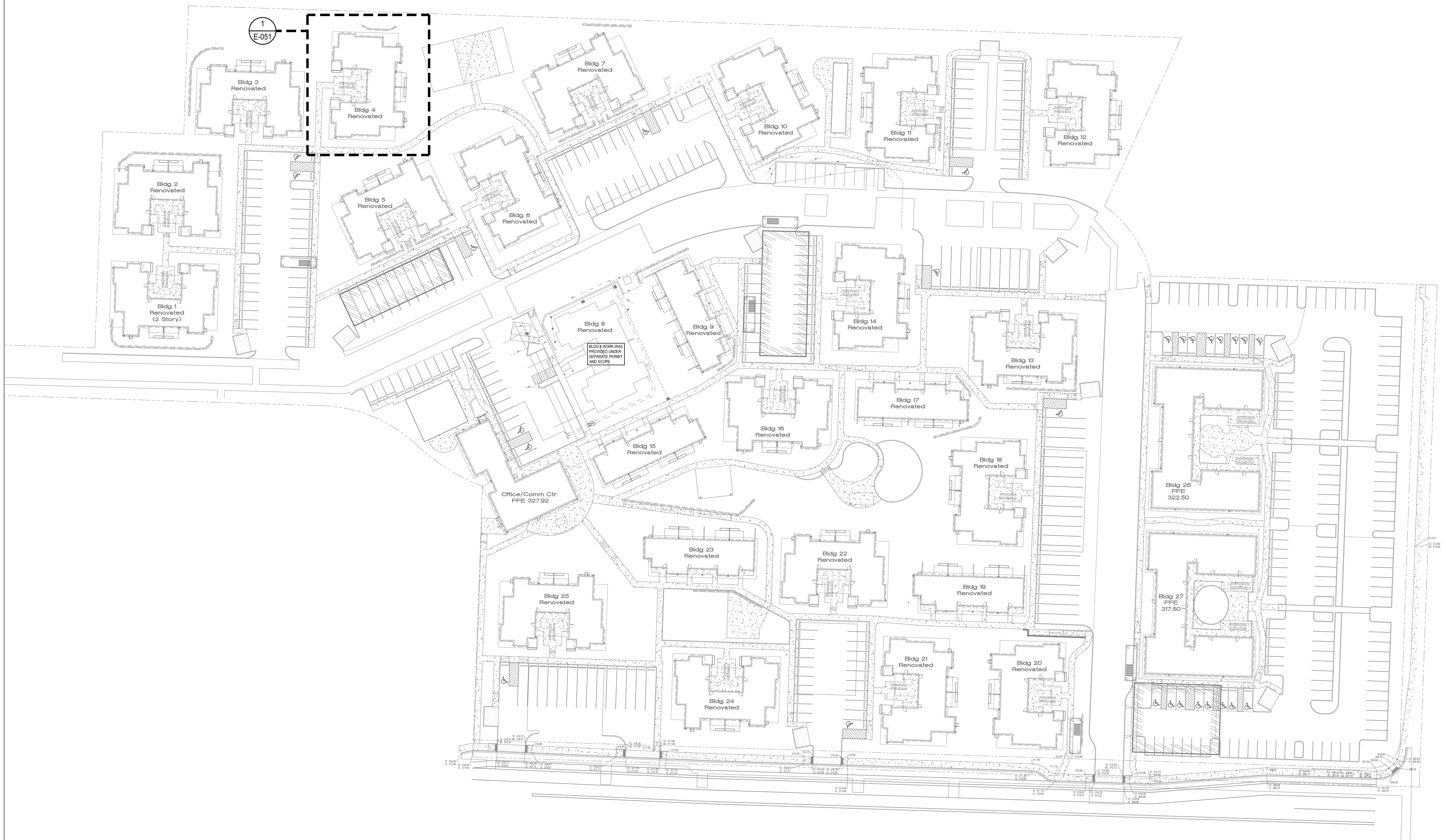
E4-005



OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

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117 S. Main St., Suite 400
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GEORGINNA M. L... STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER

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OVERALL PROJECT SITE PLAN

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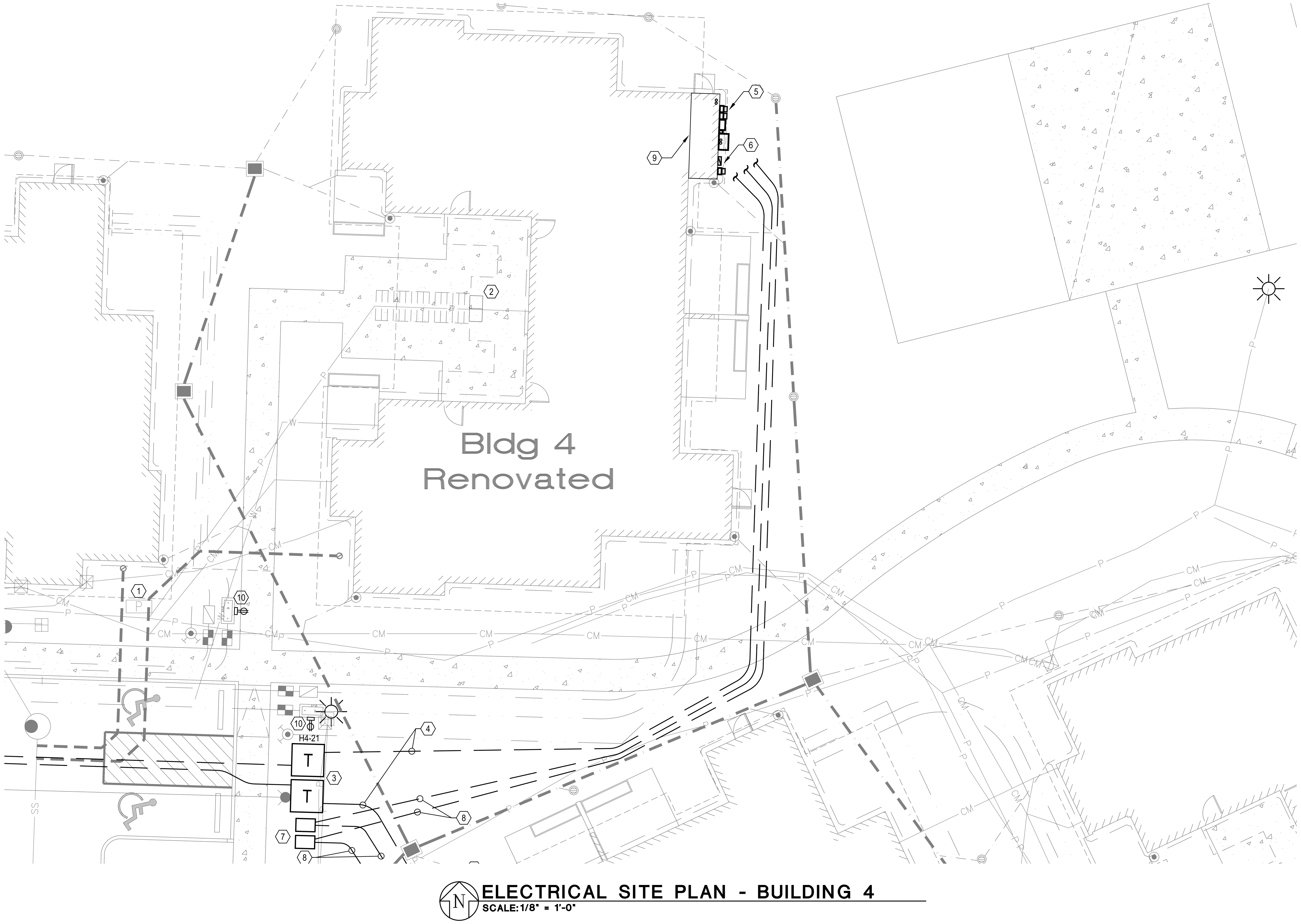
ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.



ELECTRICAL SITE PLAN - BUILDING 4

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

FLAG NOTES (X):

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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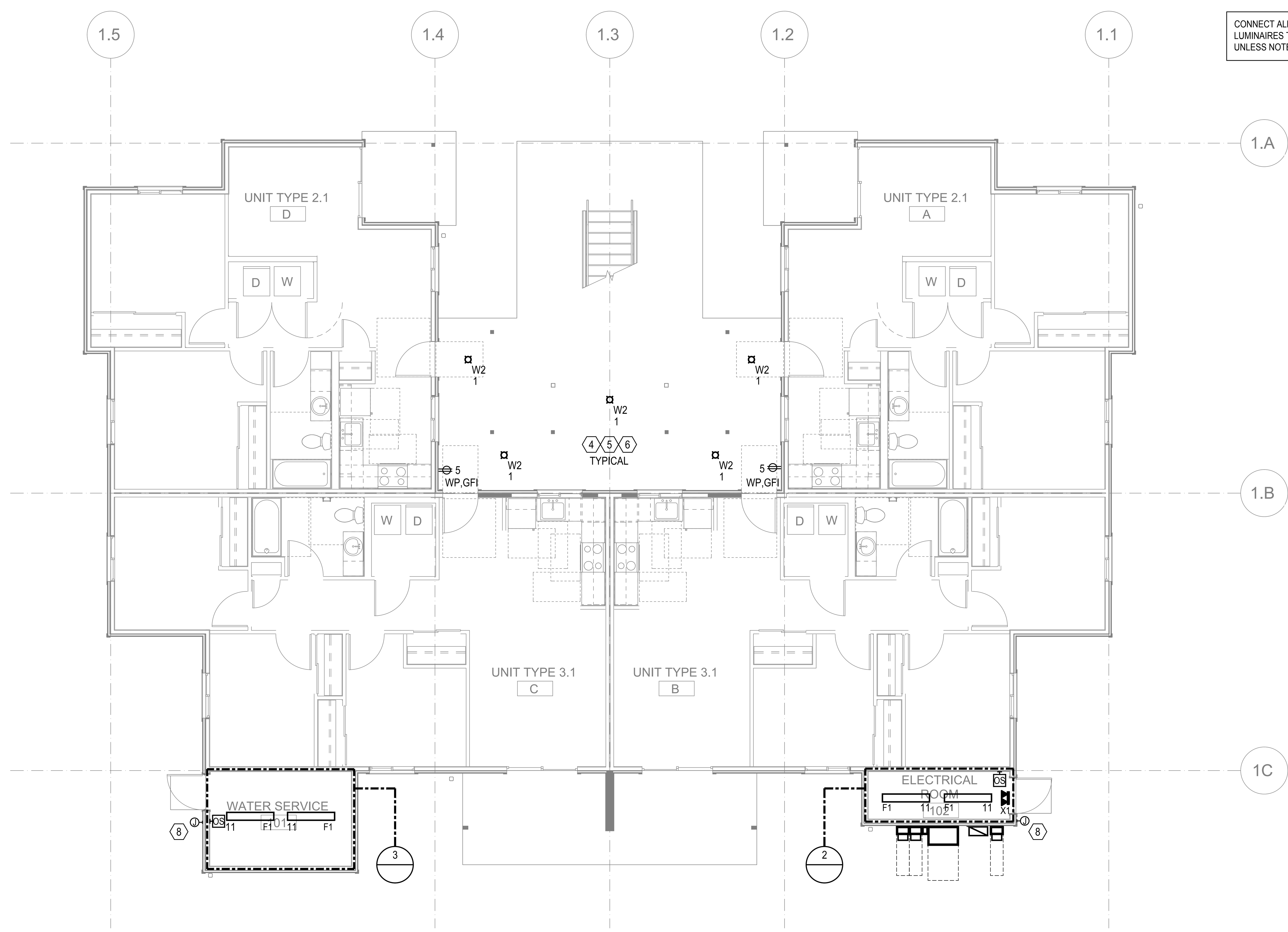
ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H4 UNLESS NOTED OTHERWISE.



POWER AND LIGHTING PLAN - BUILDING 4 - LEVEL 1

SCALE: 3/16"=1'-0"

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.

2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.

3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.

5. PROVIDE (1) 220 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR LIGHTING FIXTURES TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-220-PB-S-SD

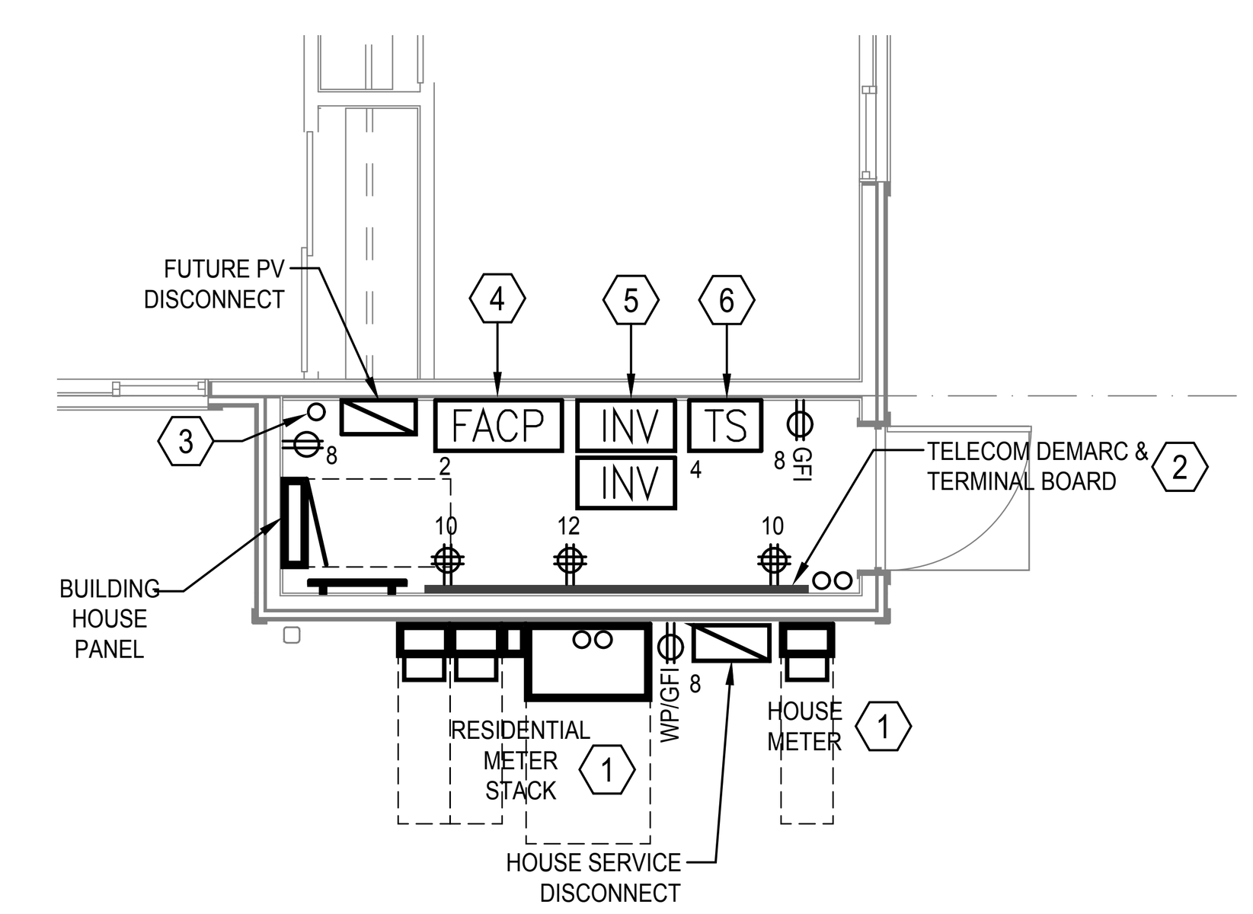
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.

7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.

8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.

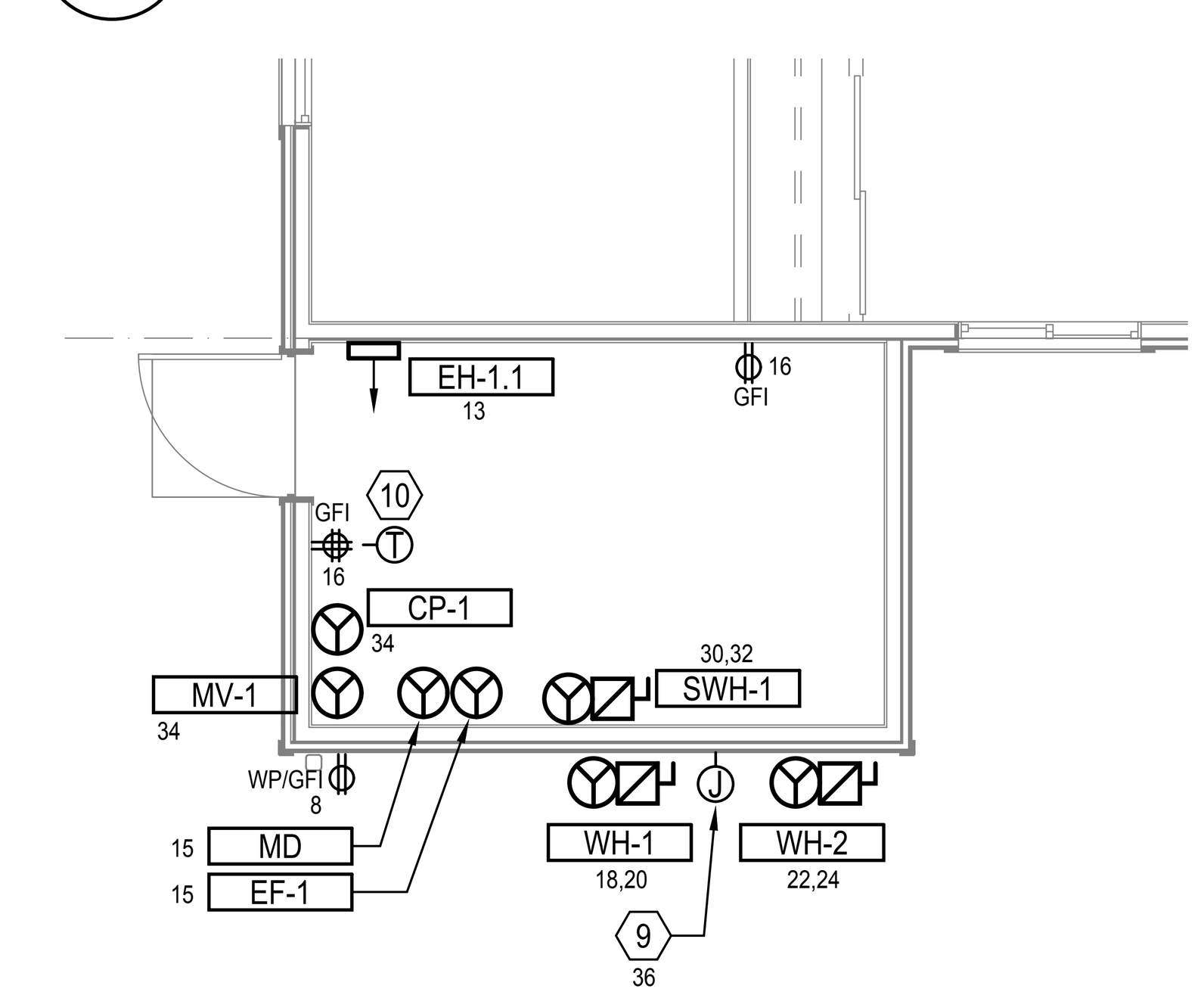
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.

10. ELECTRICAL CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



2 ELECTRICAL ROOM

E101 1/4"=1'-0"



3 WATER ROOM

E101 1/4"=1'-0"

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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BUILDING 4

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

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TITLE

POWER AND LIGHTING PLAN - BUILDING 4 - LEVEL 1

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CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

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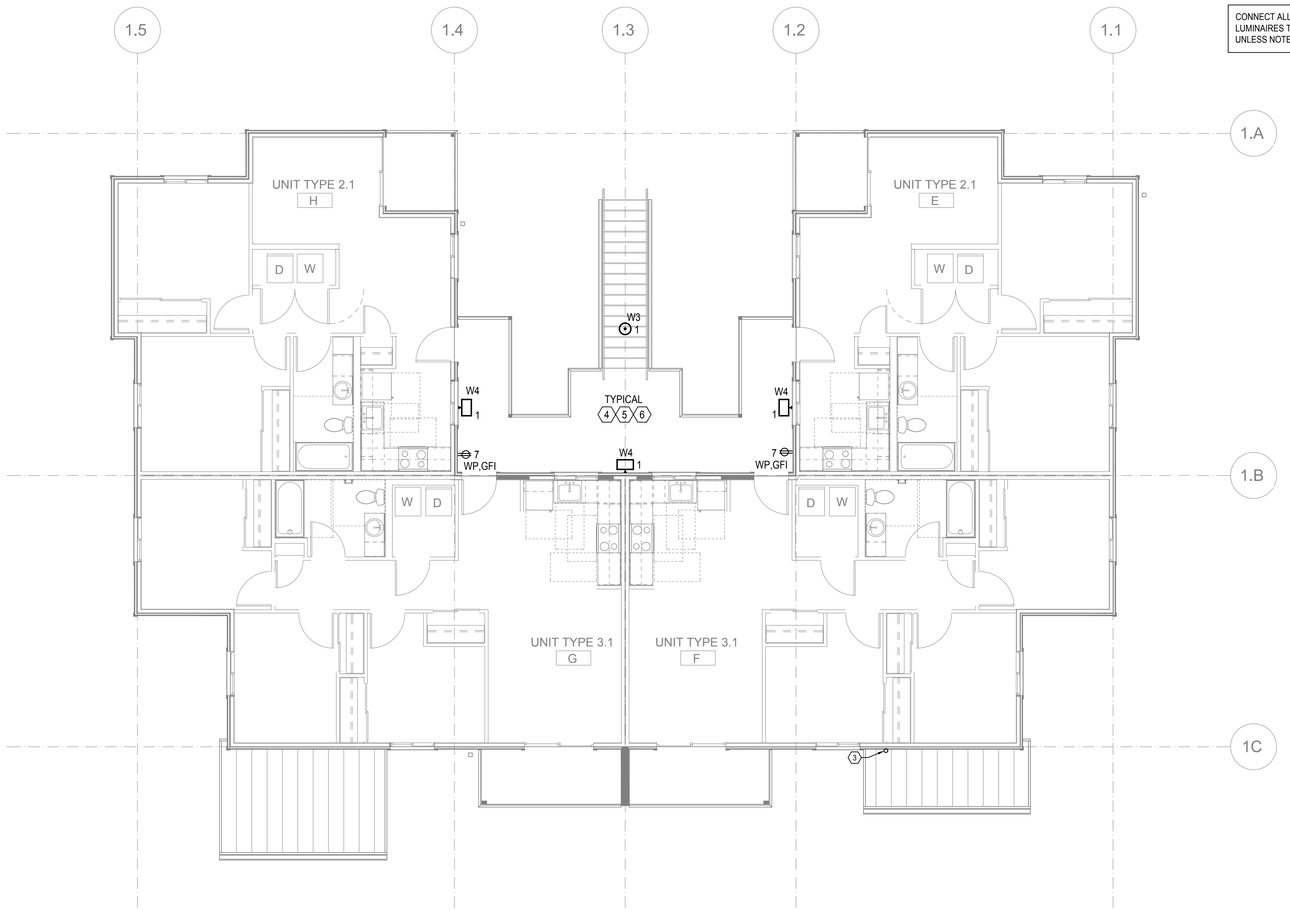

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H4 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. ALL BREEZEWAY AND STAIR LIGHTING TO BE FED BY EMERGENCY LIGHTING INVERTER. SEE LEVEL 1 PLAN FOR LOCATION AND DETAILS.
6. ALL BREEZEWAY LIGHTING TO HAVE AUTOMATIC ON/OFF CONTROL VIA TIME CLOCK. SEE LEVEL 1 PLAN FOR LOCATION.

POWER AND LIGHTING PLAN - BUILDING 4 - LEVEL 2

SCALE: 3/16"=1'-0"

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 4

BID SET

PROGINNA M. JOHNSON
STATE OF WASHINGTON
43761
REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 4 - LEVEL 2

PERMIT #	
DRAWN	RA, JF
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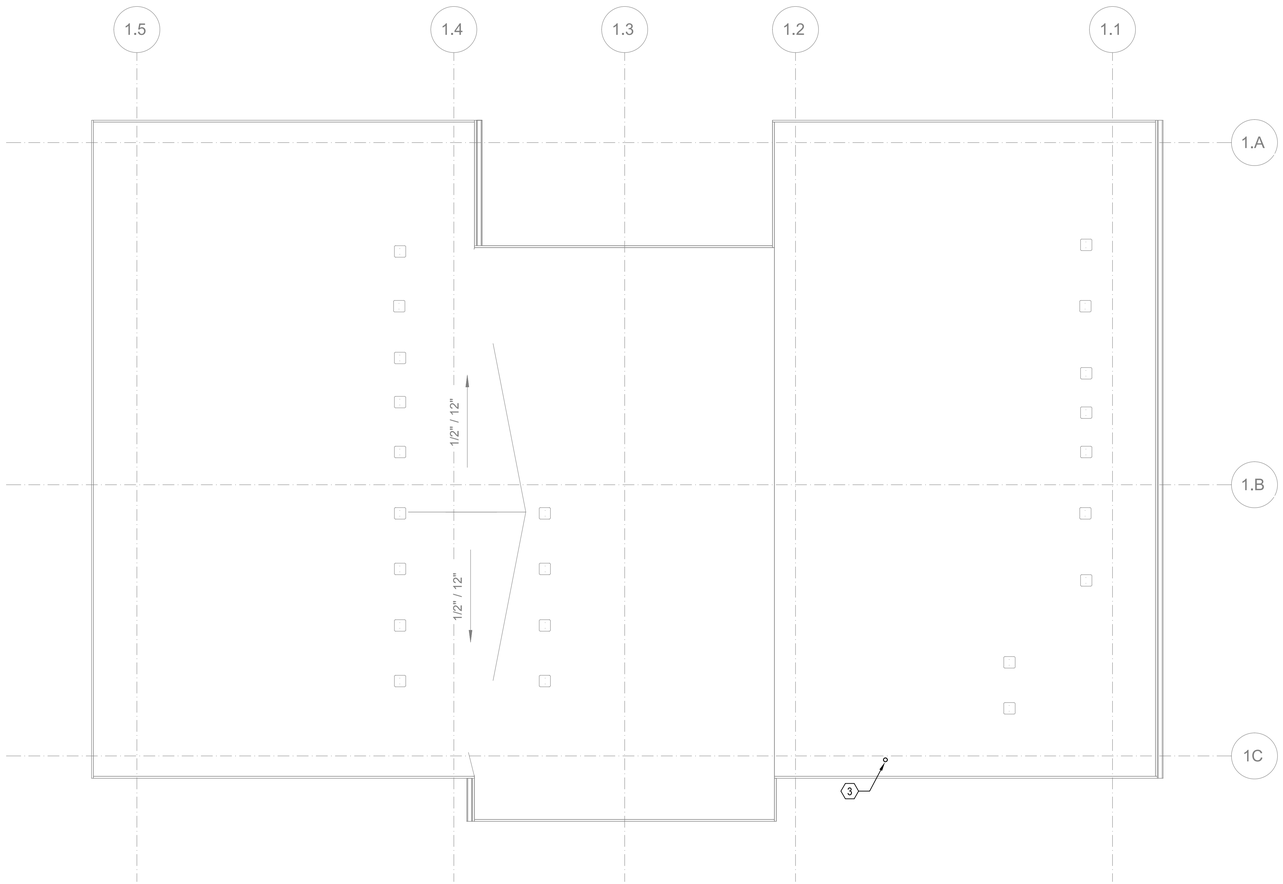

POWER PLAN - BUILDING 4 - ROOF

SCALE: 3/16"=1'-0"

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

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13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 4

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER PLAN - BUILDING 4 - ROOF

PERMIT #	
DRAWN	RA, JF
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FEEDER/ CIRCUIT SCHEDULE

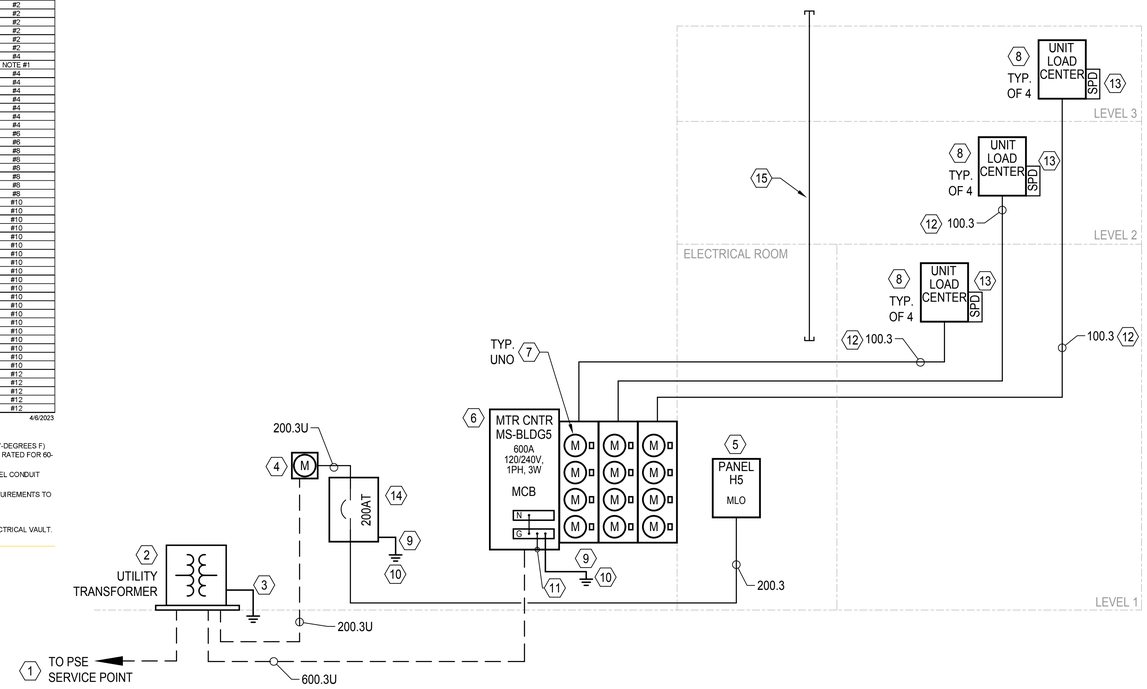
MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#6
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#6
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABLOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE: NTS

FLAG NOTES (X):

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (12) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 5

UNIT TYPE: 2BR - 2.1 AREA (SF): 782 — 4/6/2023
DEMAND LOAD (kVA): 17.93 => 74.7 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	2.35	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	6.85	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:	100%		=	3.00	kVA
3,001VA - 120,000VA:	35%		=	1.35	kVA
> 120,000VA:	25%		=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	**4.35**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:	75%				
		GENERAL APPLIANCE LOAD - DEMAND		=	**1.65 kVA**

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	**0.14 kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51] = 3.91 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA

TOTAL DWELLING UNIT LOAD PER NEC 220, PART III = 23.54 kVA

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.48	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	5.39	kVA

ELECTRIC HEAT AND AC [220.82(C)]:

LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS; 65% NAMEPLATE	=	2.54	kVA
TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV		=	**17.93**	**kVA**

UNIT TYPE: 3BR - 3.1 AREA (SF): 906 — 4/6/2023
DEMAND LOAD (kVA): 18.49 => 77.0 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	2.72	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	7.22	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:	100%		=	3.00	kVA
3,001VA - 120,000VA:	35%		=	1.48	kVA
> 120,000VA:	25%		=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	**4.48**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:	75%				
		GENERAL APPLIANCE LOAD - DEMAND		=	**1.65 kVA**

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	**0.14 kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51] = 4.53 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA

TOTAL DWELLING UNIT LOAD PER NEC 220, PART III = 24.29 kVA

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.86	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	5.54	kVA

ELECTRIC HEAT AND AC [220.82(C)]:

LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS; 65% NAMEPLATE	=	2.94	kVA
TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV		=	**18.49**	**kVA**

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL MS - 12 unit STACK — 4/6/2023
DEMAND LOAD (kVA): 137.09 => 571.2 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING APPLIANCES 1.5< X < 3.5kW QTY	1.5< X < 3.5kW LOAD (kVA)	3.5kW < X < 8.75kW QTY	3.5kW < X < 8.75kW LOAD (kVA)	8.75kW < X < 12kW QTY	8.75kW < X < 12kW LOAD (kVA)
2BR - 2.1	6	41.08	13.20	0.66	23.46	6	33.00	0	0.00	0	0.00	6	52.80
3BR - 3.1	6	43.31	13.20	0.66	27.18	6	33.00	0	0.00	0	0.00	6	52.80
0								0	0.00	0	0.00	0	0.00
TOTALS:	12	84.38	26.40	1.32	50.64	12	66.00	0	0.00	0	0.00	12	105.60
ADDITIONAL 25% OF LARGEST MOTOR:				0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD	=	334.37	kVA
DEMAND FACTOR FROM TABLE 220.84 =		41%	
TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC	=	**137.09**	**kVA**

KIRKLAND HEIGHTS - 12 UNIT STACK FLAT (REHAB)
PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 12):	137.09 kVA	
(SEE ATTACHED CALCS)		
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.		
RESIDENTIAL TOTAL:	137.09 kVA	
	571.22 AMPS @ 120/240V, 1-PHASE	
	PROVIDE 600A RESIDENTIAL METER CENTER	

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):		
LIGHTING - Breezeway +Interior:	1.5 kVA	
LIGHTING - SITE:	1.5 kVA	
GENERAL RECEPTACLES:	4.0 kVA	
MECHANICAL:	1.0 kVA	
ELECT HEAT (WATER RMS):	1.0 kVA	
CENTRAL HOT WATER (HPWH)	7.7 kVA	
ELECT SWING TANK	4.5 kVA	
HEAT TRACE	0.5 kVA	
MISCELLANEOUS:	2.5 kVA	
EV CHARGING (2):	16.6 kVA	
HOUSE TOTAL:	40.83 kVA	
	170.14 AMPS @ 120/240V, 1-PHASE	
WITH 25% SPARE CAPACITY	51.04 kVA	
	212.6708 AMPS @ 120/240V, 1-PHASE	
	PROVIDE 200A HOUSE SERVICE	
TOTAL BUILDING SERVICE:	188.13 kVA	
	783.89 AMPS @ 120/240V, 1-PHASE	

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 5

BID SET

JOHANNA M. [illegible] — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	E5-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	CONDUCTORS PER SET PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
50.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.
B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H5 — FED FROM: XFR — LOCATION: ELECTRICAL ROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 200 AMPS — M.L.O OR MCB: MLO — 200 AMPS

CKT #	DESCRIPTION	CONN LOAD TYPE	kVA	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	CONN LOAD TYPE	kVA	DESCRIPTION	CKT #
1	LTG - BREEZEWAY		0.77	20-1	20 / 1	A	20 / 1	20-1	N	0.80	FIRE ALARM CONTROL PANEL	1
3	SPARE		0.00		20 / 1	B	20 / 1	20-1	N	0.24	LTG TIME CLOCK	4
5	RECEPT - LVL 1 BREEZEWAY	R	0.36	20-1	20 / 1	A	20 / 1			0.00	SPARE	6
7	RECEPT - LVL 2 BREEZEWAY	R	0.36	20-1	20 / 1	B	20 / 1	20-1	R	0.54	RECEPTS - ELECT RM	8
9	RECEPT - LVL 3 BREEZEWAY	R	0.36	20-1	20 / 1	A	20 / 1	20-1	R	0.72	RECEPTS - TELECOM	10
11	LTG - ELECT RM/ CLOSETS	L	0.24	20-1	20 / 1	B	20 / 1	20-1	R	0.36	RECEPTS - TELECOM	12
13	ELECT HEATER - FIRE SPRINKLER	C	1.50	20-1	20 / 1	A	20 / 1			0.00	SPARE	14
15	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.24	20-1	20 / 1	B	20 / 1	20-1	R	0.72	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20-2N	C	1.73	HEATPUMP WATER HTR - WH-1	18
19	SPARE		0.00		20 / 1	B					-	20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20-1	20 / 1	A	15 / 2	20-2N	C	1.73	HEATPUMP WATER HTR - WH-2	22
23	SPARE		0.00		20 / 1	B					-	24
25	LTG - SITE POLES	L	0.15	20-1	20 / 1	A	15 / 2	20-2N	C	1.73	HEATPUMP WATER HTR - WH-3	26
27	SPARE		0.00		20 / 1	B					-	28
29	SPACE ONLY					A	30 / 2	30-2N	C	4.50	WH SWING TANK - SWH-1	30
31	SPACE ONLY					B						32
33	SPACE ONLY					A	20 / 1	20-1	N	0.36	CIRC PUMP (CP-1 & MX VALVE - MAV-1	34
35	SPACE ONLY					B	20 / 1	20-1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

		CONNECTED LOAD		DEMAND FACTOR		DEMAND LOAD	
L	= LIGHTING	0.67	kVA	125%		0.84	kVA
R	= RECEPTACLES	4.14	kVA	NEC 220.44		4.14	kVA
M	= MOTORS	0.24	kVA	100%		0.24	kVA
	PLUS 25% OF LARGEST MOTOR	0.24	kVA	25%		0.06	kVA
C	= CONTINUOUS	11.18	kVA	125%		13.98	kVA
N	= NON-CONTINUOUS	1.44	kVA	100%		1.44	kVA
K	= KITCHEN	0.00	kVA	75%		0.00	kVA

PANEL CONNECTED TOTAL: 17.67 kVA, 73.64 AMPS
PANEL DEMAND TOTAL: 20.70 kVA, 86.24 AMPS

NOTES:
A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (#):
1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER

LOAD CENTER - 2 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O OR MCB: MLO — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20-1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN LTG, RECEPTS, SD (1)	20-1	20 / 1	B			-	4
5	RECEPTS, ERV, MEDIA PNL (1)	20-1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20-1	20 / 1	B			-	8
9	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	A	20 / 3	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	B			-	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20-1	20 / 1	B			-	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

LOAD CENTER - 3 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O OR MCB: MLO — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20-1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN LTG, RECEPTS, SD (1)	20-1	20 / 1	B			-	4
5	RECEPTS, ERV, MEDIA PNL (1)	20-1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20-1	20 / 1	B			-	8
9	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	A	20 / 3	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	B			-	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20-1	20 / 1	B			-	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-3	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-1	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.163					2
			/						
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS; CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES. DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	kW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	240 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3

NOTES:
1. CONFIRM EXACT LOCATION WITH ARCHITECT.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 12 UNIT STACKED FLATS

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES BED 1	BED 2	BED 3	LIVING
A	2-BDRM	CH-0.84	CH-0.7		CH-1.8
B	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
C	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
D	2-BDRM	CH-0.84	CH-0.7		CH-1.8
E	2-BDRM	CH-0.56	CH-0.56		CH-0.93
F	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
G	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
H	2-BDRM	CH-0.56	CH-0.56		CH-0.93
I	2-BDRM	CH-0.7	CH-0.56		CH-1.12
J	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
K	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
L	2-BDRM	CH-0.7	CH-0.56		CH-1.12

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.

B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
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BUILDING 5

BID SET

VIRGINNA M. BROOKSON — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

SCHEDULES

PERMIT #
DRAWN RA, JF
CHECKED GL
ISSUE DATE 4/14/2023
JOB NO. 22016
SHEET NO.:

E5-004

10/7/2021 7:33:34 AM

LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/630 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE
& SPECS FOR ALL 'S' LIGHTING FIXTURES.

10/7/2021 7:33:34 AM

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 5

BID SET

GEORGINNA M. LAMPSON
STATE OF WASHINGTON
43761
REGISTERED
PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

LUMINAIRE SCHEDULE

PERMIT #	
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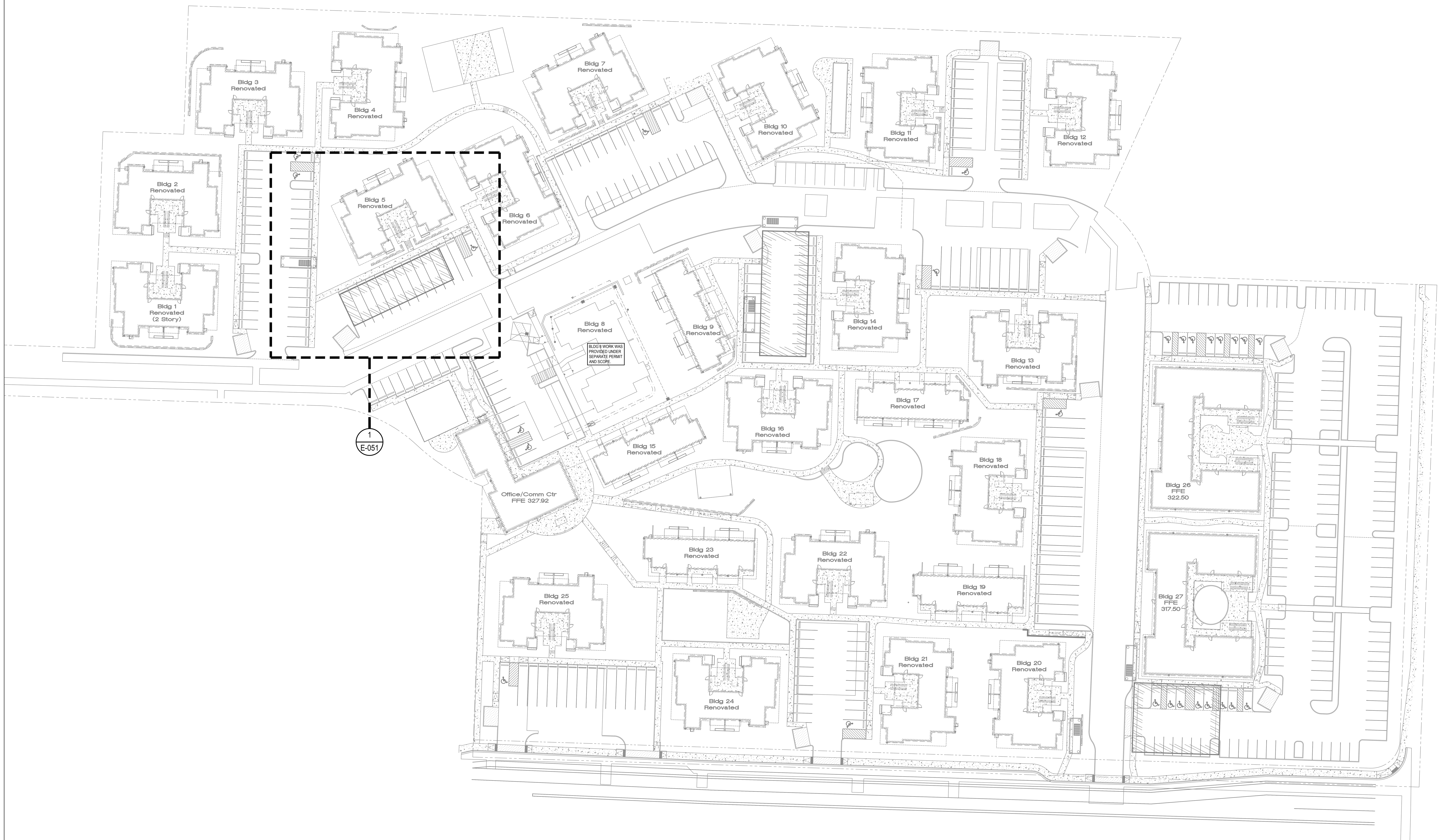
SHEET NO.:

E5-005



OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
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OVERALL PROJECT SITE PLAN

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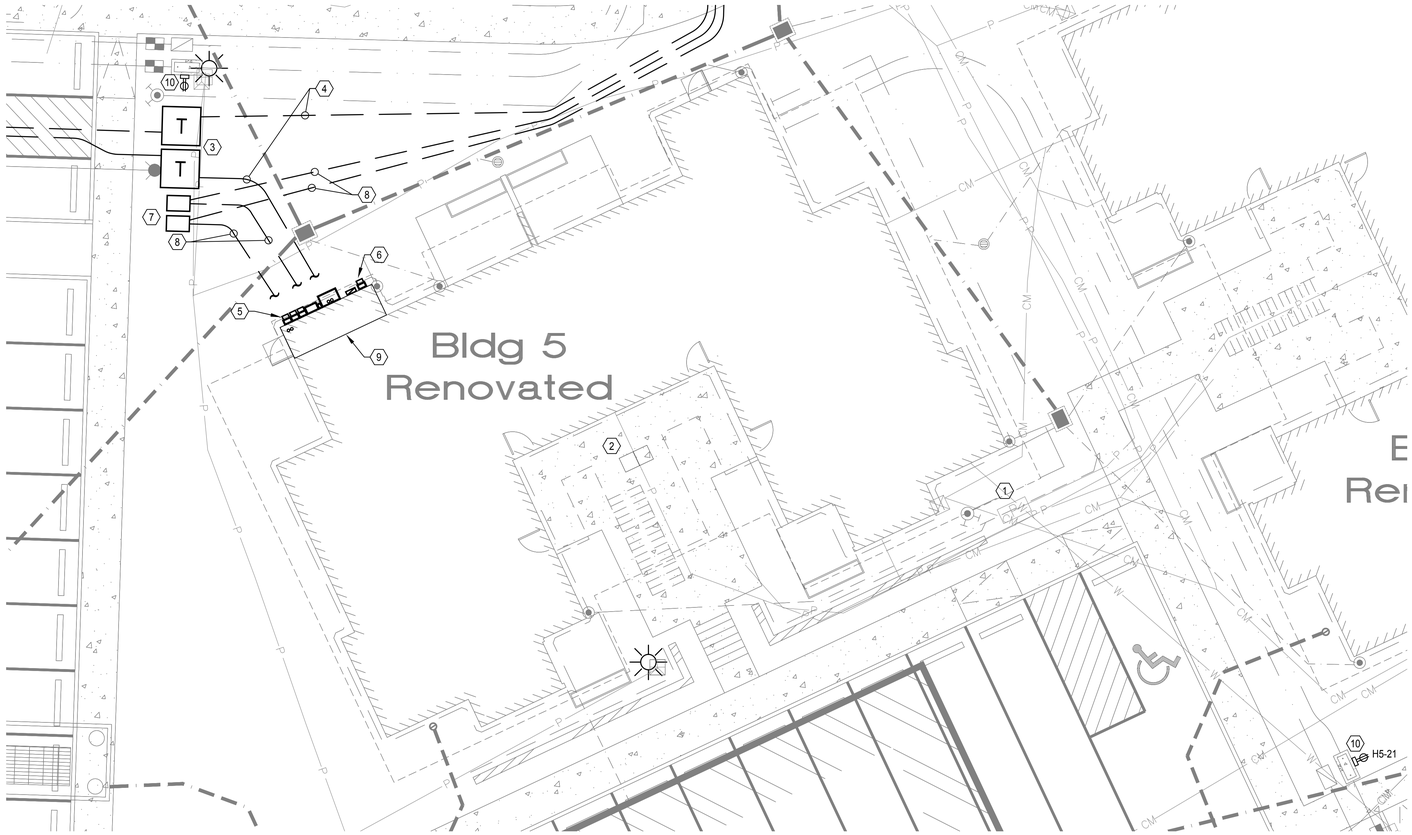
SHEET NO.:	

E5-050

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.



ELECTRICAL SITE PLAN - BUILDING 5
SCALE: 1/8" = 1'-0"

FLAG NOTES (X):

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

10/7/2021 7:33:34 AM

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 5

BID SET

GEORGINA M. JAMES — STATE OF WASHINGTON — 45781 — REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

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ELECTRICAL SITE PLAN - BUILDING 5

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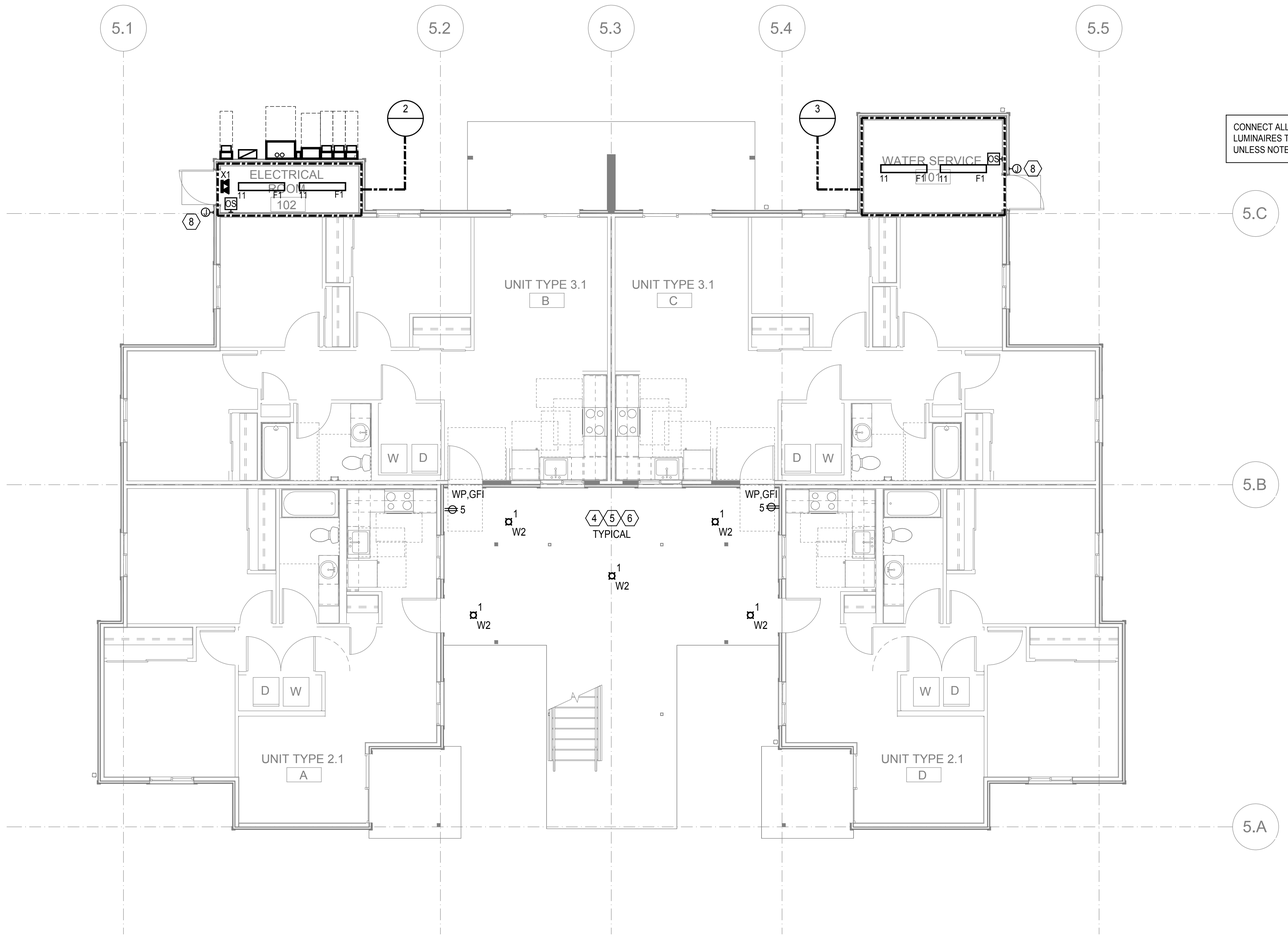
SHEET NO.:	

E5-051



CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H5 UNLESS NOTED OTHERWISE.

POWER AND LIGHTING PLAN - BUILDING 5 - LEVEL 1

SCALE: 3/16"=1'-0"

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

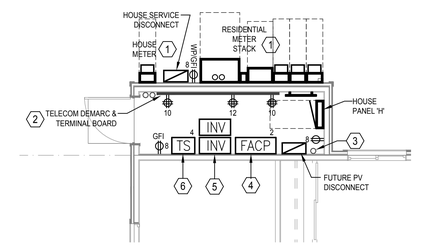
B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

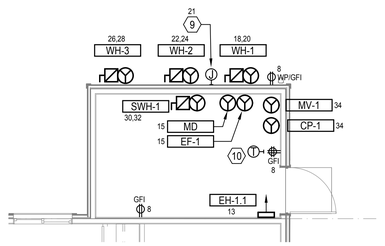
D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.
2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS.
   BASIS OF DESIGN: SURE-LITES # INV-375-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.
7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.
8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.
10. CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



2 E-101 ELECTRICAL ROOM
1/4"=1'-0"



3 E-101 WATER ROOM
1/4"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

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13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 5

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 5 - LEVEL 1

PERMIT #	
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ISSUE DATE	4/14/2023
JOB NO.	22016
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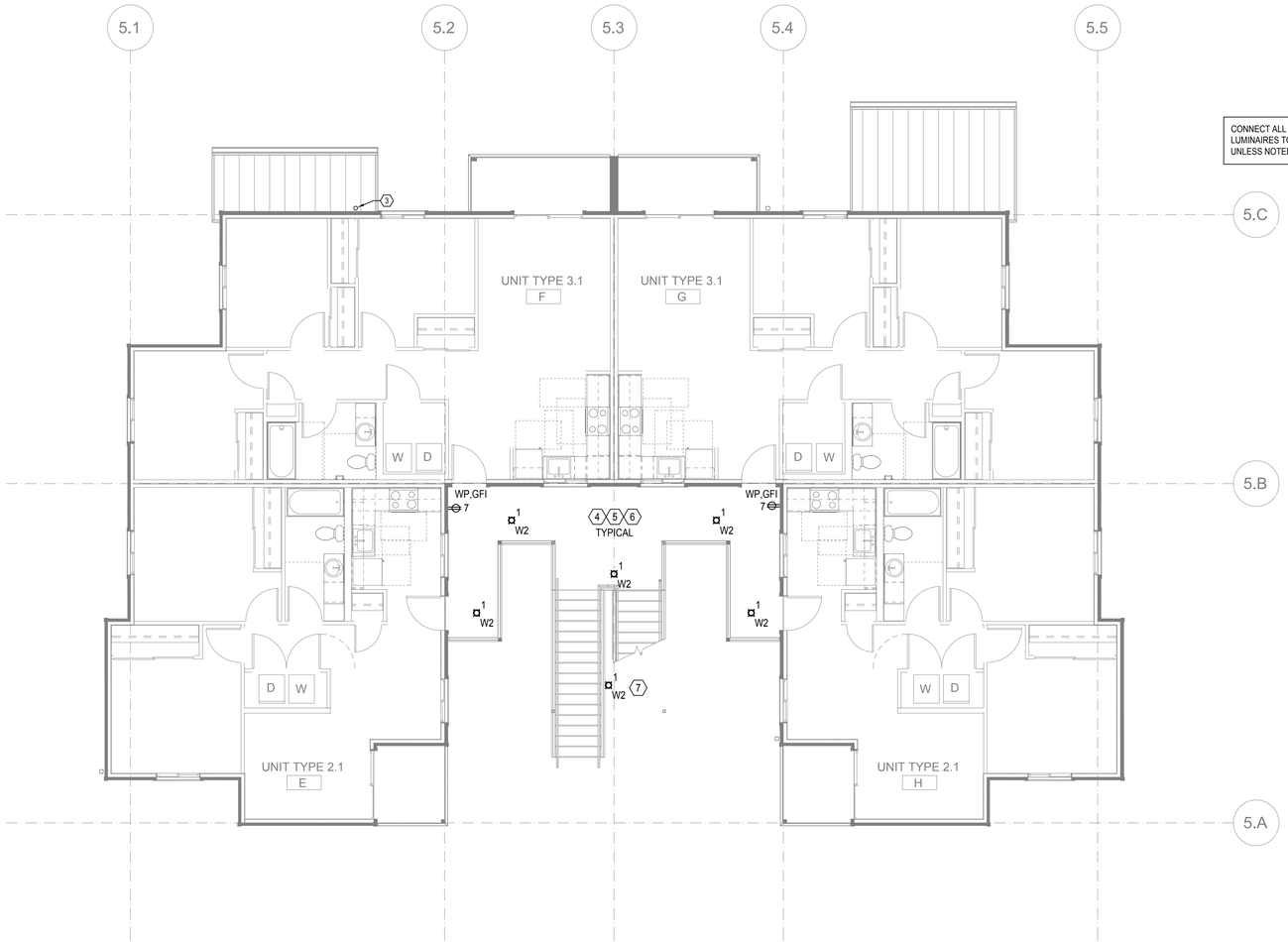
10/7/2021 7:33:34 AM



ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H5 UNLESS NOTED OTHERWISE.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-375-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.
7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.

POWER AND LIGHTING PLAN - BUILDING 5 - LEVEL 2

SCALE: 3/16"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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KIRKLAND HEIGHTS APARTMENTS

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POWER AND LIGHTING PLAN - BUILDING 5 - LEVEL 2

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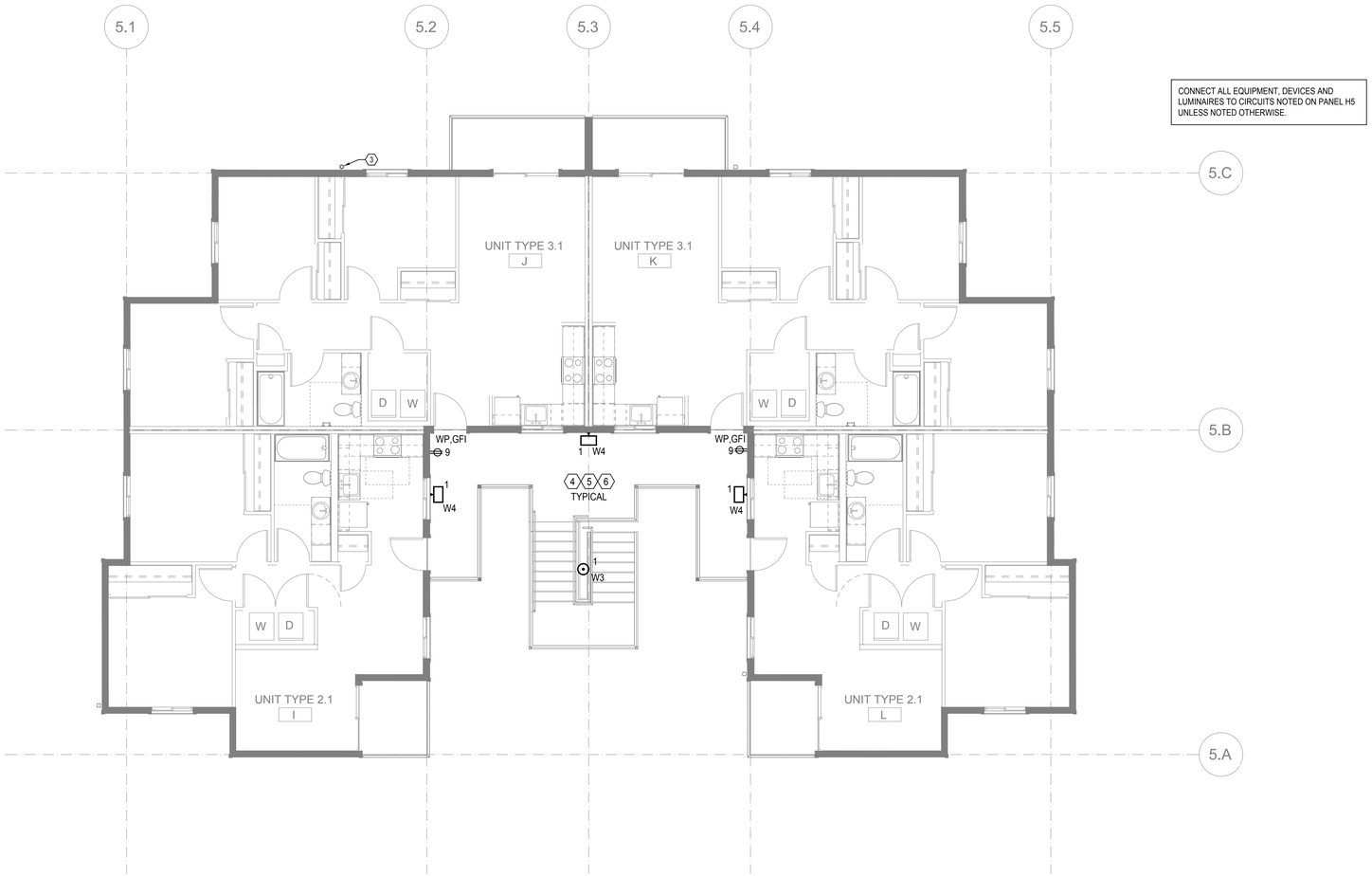
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E5-102

10/7/2021 7:33:34 AM



CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H5 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
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5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-375-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.

POWER AND LIGHTING PLAN - BUILDING 5 - LEVEL 3

SCALE: 3/16"=1'-0"

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MECHANICAL + ELECTRICAL ENGINEERS
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SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 5

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 5 - LEVEL 3

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E5-103

10/7/2021 7:33:34 AM

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

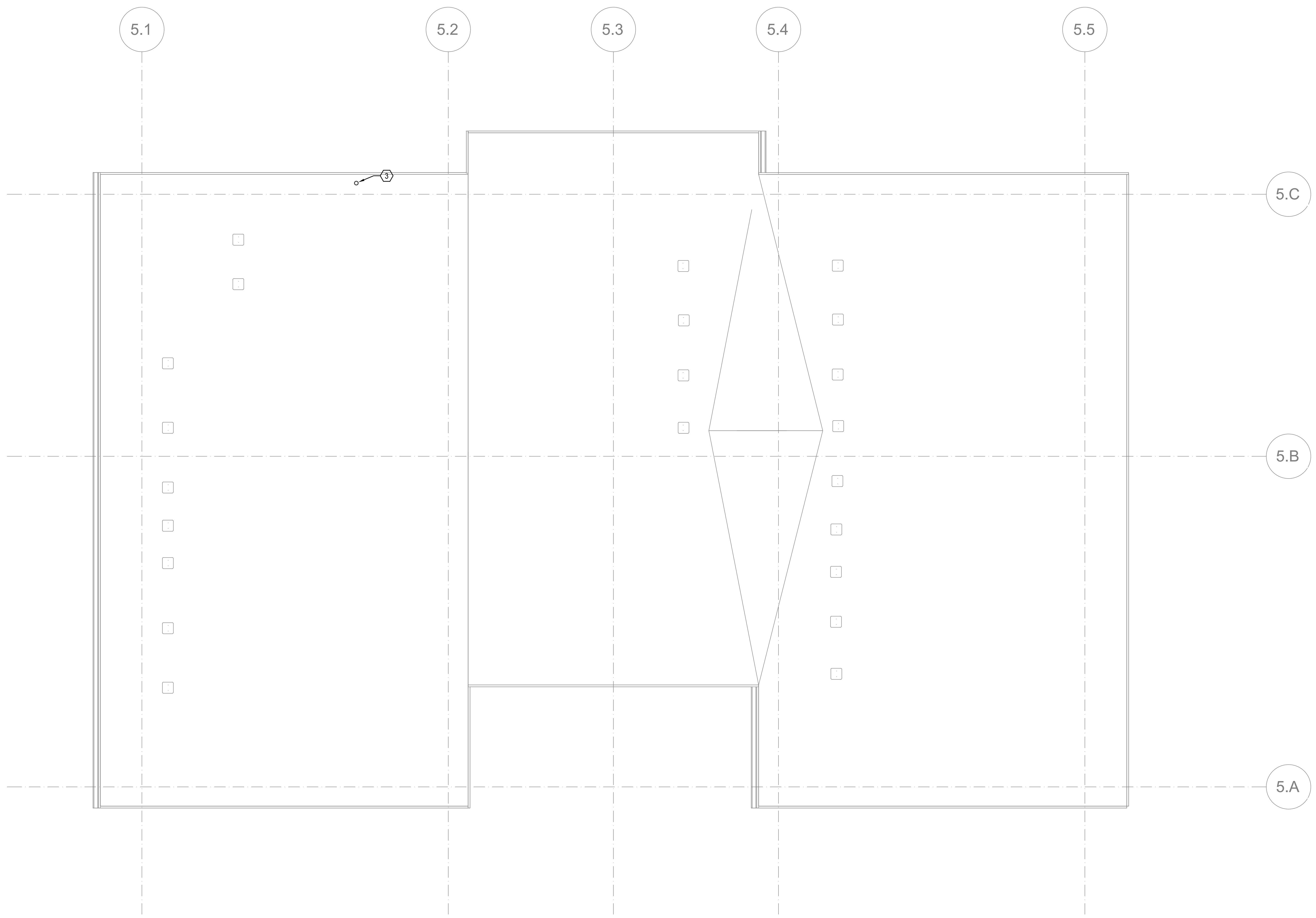
D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED

2. NOT USED.

3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).



POWER PLAN - BUILDING 5 - ROOF

SCALE: 3/16"=1'-0"

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St., Kirkland, WA 98034

BUILDING 5

BID SET

GEORGINNA M. ... STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER PLAN - BUILDING 5 - ROOF

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E5-104

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FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

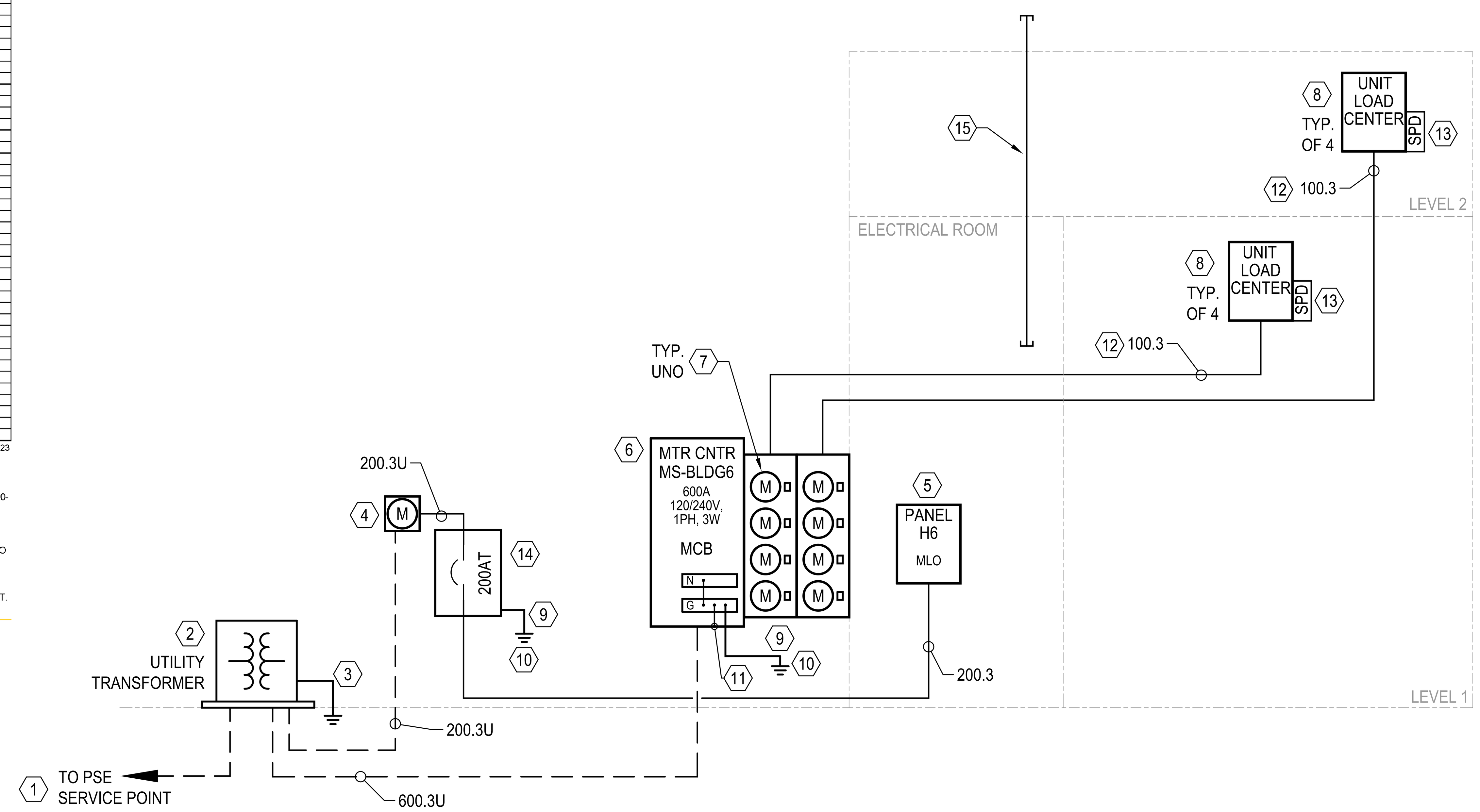
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM
SCALE:NTS

FLAG NOTES ⓧ :

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (8) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 6

UNIT TYPE: 2BR - 2.1 **AREA (SF):** 782 4/6/2023
DEMAND LOAD (kVA): 17.93 => 74.7 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =		AREA x 3VA/SF	=	2.35	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	6.85	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:	100%		=	3.00	kVA
3,001VA - 120,000VA:	35%		=	1.35	kVA
> 120,000VA:	25%		=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	**4.35**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)			
REFRIGERATOR	1	AT	0.7	=	0.70	kVA
RANGE HOOD	1	AT	0.3	=	0.30	kVA
MICROWAVE		AT		=	0.00	kVA
DISHWASHER		AT		=	0.00	kVA
WASHER	1	AT	1.2	=	1.20	kVA
GARBAGE DISPOSAL		AT		=	0.00	kVA
WATER HEATER		AT		=	0.00	kVA
			SUBTOTAL (CONNECTED)	=	2.20	kVA
APPLIANCE DEMAND FACTOR [220.53]:	75%					
			GENERAL APPLIANCE LOAD - DEMAND	=	**1.65**	**kVA**

MOTORS [220.50]:

	QTY		LOAD (kVA EACH)			
TOILET EXHAUST FAN		AT		=	0.00	kVA
ERV UNIT	1	AT	0.11	=	0.11	kVA
KITCHEN EXHAUST FAN		AT		=	0.00	kVA
+25% OF LARGEST MOTOR				=	0.03	kVA
			GENERAL MOTOR LOAD - DEMAND	=	**0.14**	**kVA**
100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	3.91	kVA

	QTY		LOAD (kVA EACH)			
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50	kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00	kVA
ELECTRIC OVEN [220.55]		AT		=	0.00	kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00	kVA

TOTAL DWELLING UNIT LOAD PER NEC 220, PART III = 23.54 kVA

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.48	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	5.39	kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS; 65% NAMEPLATE	=	2.54	kVA

TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV = 17.93 kVA

UNIT TYPE: 3BR - 3.1 **AREA (SF):** 906 4/6/2023
DEMAND LOAD (kVA): 18.49 => 77.0 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =		AREA x 3VA/SF	=	2.72	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	7.22	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:	100%		=	3.00	kVA
3,001VA - 120,000VA:	35%		=	1.48	kVA
> 120,000VA:	25%		=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	**4.48**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)			
REFRIGERATOR	1	AT	0.7	=	0.70	kVA
RANGE HOOD	1	AT	0.3	=	0.30	kVA
MICROWAVE		AT		=	0.00	kVA
DISHWASHER		AT		=	0.00	kVA
WASHER	1	AT	1.2	=	1.20	kVA
GARBAGE DISPOSAL		AT		=	0.00	kVA
WATER HEATER		AT		=	0.00	kVA
			SUBTOTAL (CONNECTED)	=	2.20	kVA
APPLIANCE DEMAND FACTOR [220.53]:	75%					
			GENERAL APPLIANCE LOAD - DEMAND	=	**1.65**	**kVA**

MOTORS [220.50]:

	QTY		LOAD (kVA EACH)			
TOILET EXHAUST FAN		AT		=	0.00	kVA
ERV UNIT	1	AT	0.11	=	0.11	kVA
KITCHEN EXHAUST FAN		AT		=	0.00	kVA
+25% OF LARGEST MOTOR				=	0.03	kVA
			GENERAL MOTOR LOAD - DEMAND	=	**0.14**	**kVA**
100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	4.53	kVA

	QTY		LOAD (kVA EACH)			
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50	kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00	kVA
ELECTRIC OVEN [220.55]		AT		=	0.00	kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00	kVA

TOTAL DWELLING UNIT LOAD PER NEC 220, PART III = 24.29 kVA

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.86	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	5.54	kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS; 65% NAMEPLATE	=	2.94	kVA

TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV = 18.49 kVA

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL MS - 8 unit STACK 4/6/2023
DEMAND LOAD (kVA): 95.86 => 399.4 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING 1.5< X < 3.5kW QTY	COOKING 1.5< X < 3.5kW LOAD (kVA)	COOKING 3.5kW < X < 8.75kW QTY	COOKING 3.5kW < X < 8.75kW LOAD (kVA)	COOKING 8.75kW < X < 12kW QTY	COOKING 8.75kW < X < 12kW LOAD (kVA)
2BR - 2.1	4	27.38	8.80	0.44	15.64	4	22.00	0	0.00	0	0.00	4	35.20
3BR - 3.1	4	28.87	8.80	0.44	18.12	4	22.00	0	0.00	0	0.00	4	35.20
0								0	0.00	0	0.00	0	0.00
TOTALS:	8	56.26	17.60	0.88	33.76	8	44.00	0	0.00	0	0.00	8	70.40
	ADDITIONAL 25% OF LARGEST MOTOR:			0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD = 222.92 kVA
DEMAND FACTOR FROM TABLE 220.84 = 43%

TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC = 95.86 kVA

KIRKLAND HEIGHTS - 8 UNIT STACK FLAT (REHAB)
PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 8):	95.86	kVA
(SEE ATTACHED CALCS)		
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.		
RESIDENTIAL TOTAL:	95.86	kVA
	399.40	AMPS @ 120/240V, 1-PHASE
	PROVIDE 600A RESIDENTIAL METER CENTER	

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):		
LIGHTING - Breezeway +Interior:	1.5	kVA
LIGHTING - SITE:	1.5	kVA
GENERAL RECEPTACLES:	4.0	kVA
MECHANICAL:	1.0	kVA
ELECT HEAT (WATER RMS):	1.0	KVA
CENTRAL HOT WATER (HPWH)	5.6	KVA
ELECT SWING TANK	4.5	KVA
HEAT TRACE	0.5	kVA
MISCELLANEOUS:	2.5	kVA
EV CHARGING (2):	16.6	kVA
HOUSE TOTAL:	38.71	kVA
	161.30	AMPS @ 120/240V, 1-PHASE
WITH 25% SPARE CAPACITY	48.39	kVA
	201.6208	AMPS @ 120/240V, 1-PHASE
	PROVIDE 200A HOUSE SERVICE	
TOTAL BUILDING SERVICE:	144.25	kVA
	601.03	AMPS @ 120/240V, 1-PHASE

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

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King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS
13317 NE 133rd St., Kirkland, WA 98034

BUILDING 6
BID SET

GEORGINA M. ... STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE
SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	E6-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	CONDUCTORS PER SET PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILITY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.
B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H6 — FED FROM: XFR — LOCATION: ELECTRICAL ROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 200 AMPS — M.L.O OR MCB: MLO — 200 AMPS

CKT #	DESCRIPTION	CONN LOAD TYPE	CONN LOAD kVA	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	CONN LOAD TYPE	CONN LOAD kVA	DESCRIPTION	CKT #
1	TG - BREEZEWAY	L	0.15	20.1	20 / 1	A	20 / 1	20.1	N	0.60	FIRE ALARM CONTROL PANEL	1
3	SPARE		0.00		20 / 1	B	20 / 1	20.1	N	0.24	LTG TIME CLOCK	4
5	RECEPT - LVL 1 BREEZEWAY	R	0.36	20.1	20 / 1	A	20 / 1			0.00	SPARE	6
7	RECEPT - LVL 2 BREEZEWAY	R	0.36	20.1	20 / 1	B	20 / 1	20.1	R	0.54	RECEPTS - ELECT RM	8
9	SPARE		0.00		20 / 1	A	20 / 1	20.1	R	0.72	RECEPTS - TELECOM	10
11	LTG - ELECT / MECH CLOSETS	L	0.24	20.1	20 / 1	B	20 / 1	20.1	R	0.36	RECEPTS - TELECOM	12
13	ELECT HEATER - FIRE SPRINKLER	C	1.50	20.1	20 / 1	A	20 / 1			0.00	SPARE	14
15	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.24	20.1	20 / 1	B	20 / 1	20.1	R	0.72	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-1	18
19	SPARE		0.00		20 / 1	B						20
21	HEAT TRACE - WATER CONNECTION	N	0.24		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-2	22
23	SPARE		0.00	20.1	20 / 1	B						24
25	SPARE		0.00		20 / 1	A	20 / 1			0.00	SPARE	26
27	TG - R/TF	L	0.22	20.1	20 / 1	B	20 / 1			0.00	SPARE	28
29	SPACE ONLY					A	30 / 2	30.2N	C	4.50	WH SWING TANK - SWH-1	30
31	SPACE ONLY					B						32
33	SPACE ONLY					A	20 / 1	20.1	N	0.36	CIRC PUMP CP-1 & MIX VALVE V-MV-1	34
35	SPACE ONLY					B	20 / 1	20.1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

		CONNECTED LOAD	DEMAND FACTOR	DEMAND LOAD	
L	= LIGHTING	0.61	kVA 125%	0.76	kVA
R	= RECEPTACLES	3.78	kVA NEC 220.44	3.78	kVA
M	= MOTORS	0.24	kVA 100%	0.24	kVA
	PLUS 25% OF LARGEST MOTOR	0.24	kVA 25%	0.06	kVA
C	= CONTINUOUS	9.46	kVA 125%	11.82	kVA
N	= NON-CONTINUOUS	1.44	kVA 100%	1.44	kVA
K	= KITCHEN	0.00	kVA 75%	0.00	kVA

PANEL CONNECTED TOTAL: 15.53 kVA / 64.69 AMPS
PANEL DEMAND TOTAL: 18.10 kVA / 75.43 AMPS

NOTES:
A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.
CIRCUIT NOTES (X):
1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER.

LOAD CENTER - 2 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O OR MCB: MLO — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN'L TG RECEPTS, BD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ENV. MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	DED RECEPT - AC UNIT (BY TENANT)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.
CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 5FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

LOAD CENTER - 3 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O OR MCB: MLO — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN'L TG RECEPTS, BD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ENV. MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	5
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.
CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 5FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-1	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.163					2
			/						
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS. CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES. DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	240 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3

NOTES:
1. CONFIRM EXACT LOCATION WITH ARCHITECT.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 8 UNIT STACKED FLATS

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES BED 1	BED 2	BED 3	LIVING
A	2-BDRM	CH-0.84	CH-0.7		CH-1.8
B	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
C	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
D	2-BDRM	CH-0.84	CH-0.7		CH-1.8
E	2-BDRM	CH-0.7	CH-0.56		CH-1.12
F	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
G	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
H	2-BDRM	CH-0.7	CH-0.56		CH-1.12

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.
B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 6

BID SET

REGINNA M. BYERS — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

SCHEDULES

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	E6-004

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/630 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE
& SPECS FOR ALL 'S' LIGHTING FIXTURES.

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 6

BID SET

GEORGINNA M. JACKSON
STATE OF WASHINGTON
43761
REGISTERED
PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

LUMINAIRE SCHEDULE

PERMIT #	
DRAWN	RA, JF
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ISSUE DATE	4/14/2023
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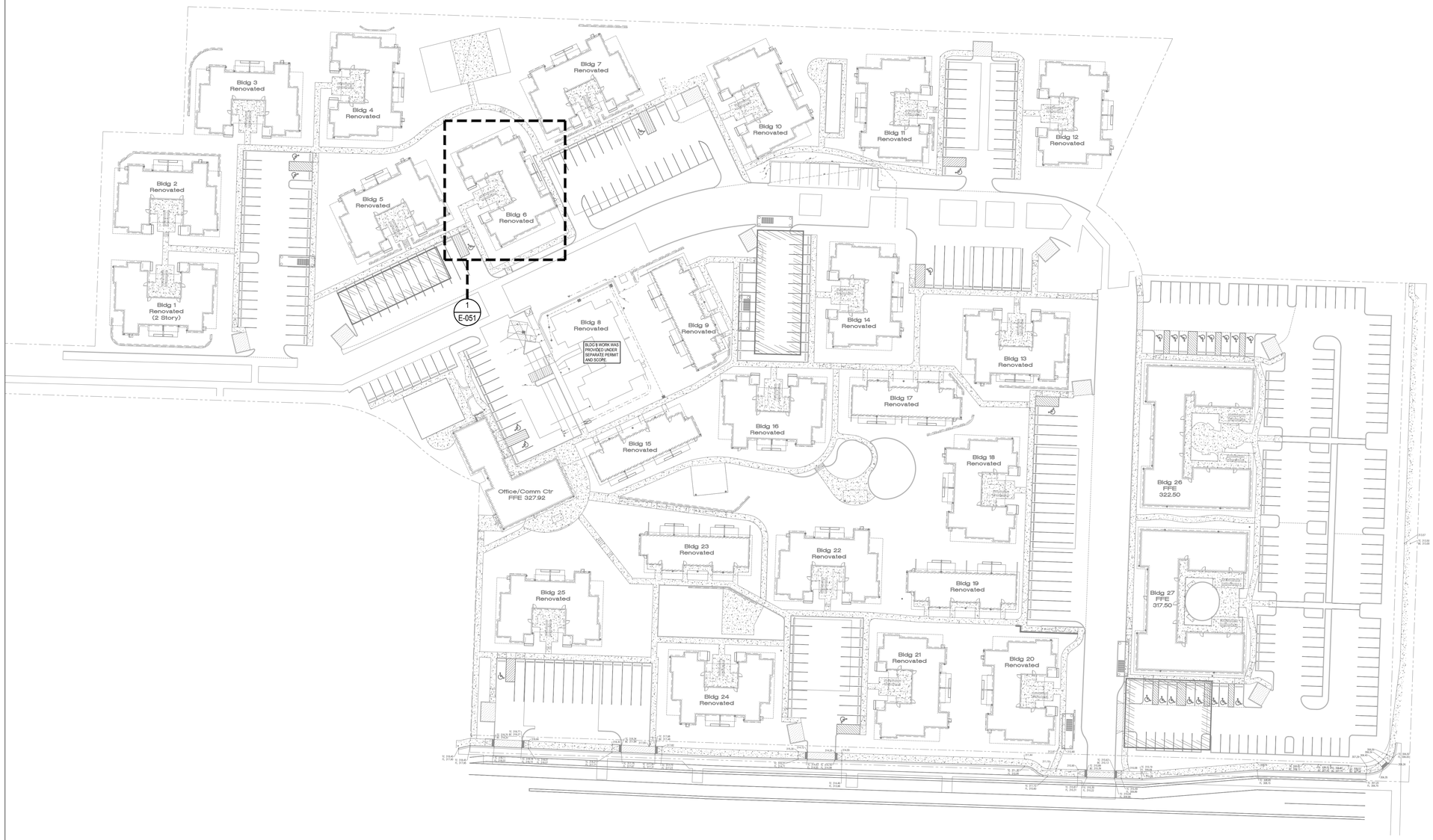

OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
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BUILDING 6

BID SET

PROGINNA M. JOHNSON — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

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OVERALL PROJECT SITE PLAN

PERMIT #	
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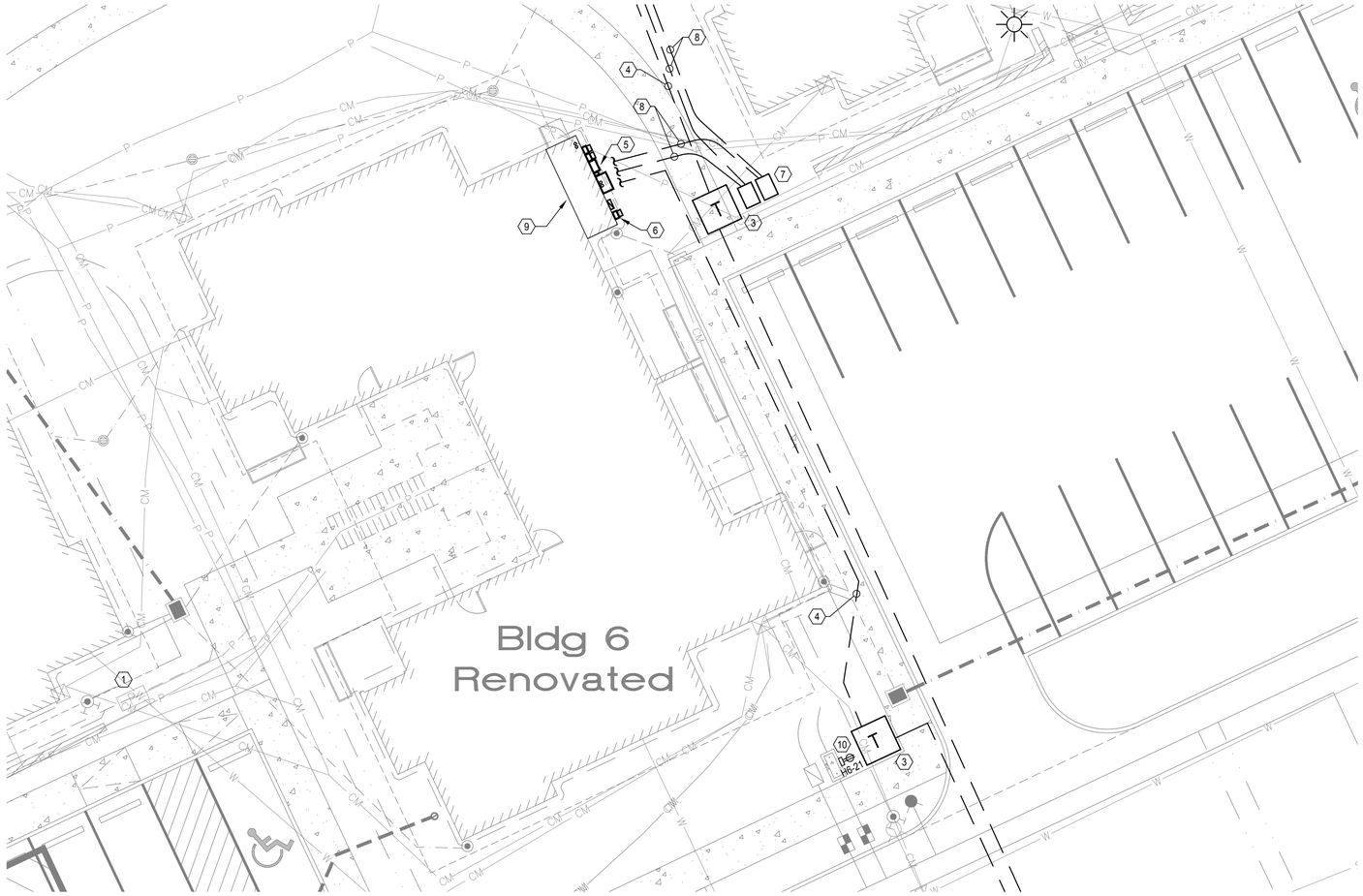
E6-050

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.



ELECTRICAL SITE PLAN - BUILDING 6
SCALE: 1/8" = 1'-0"

FLAG NOTES (X):

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

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Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

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BUILDING 6

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ELECTRICAL SITE PLAN - BUILDING 6

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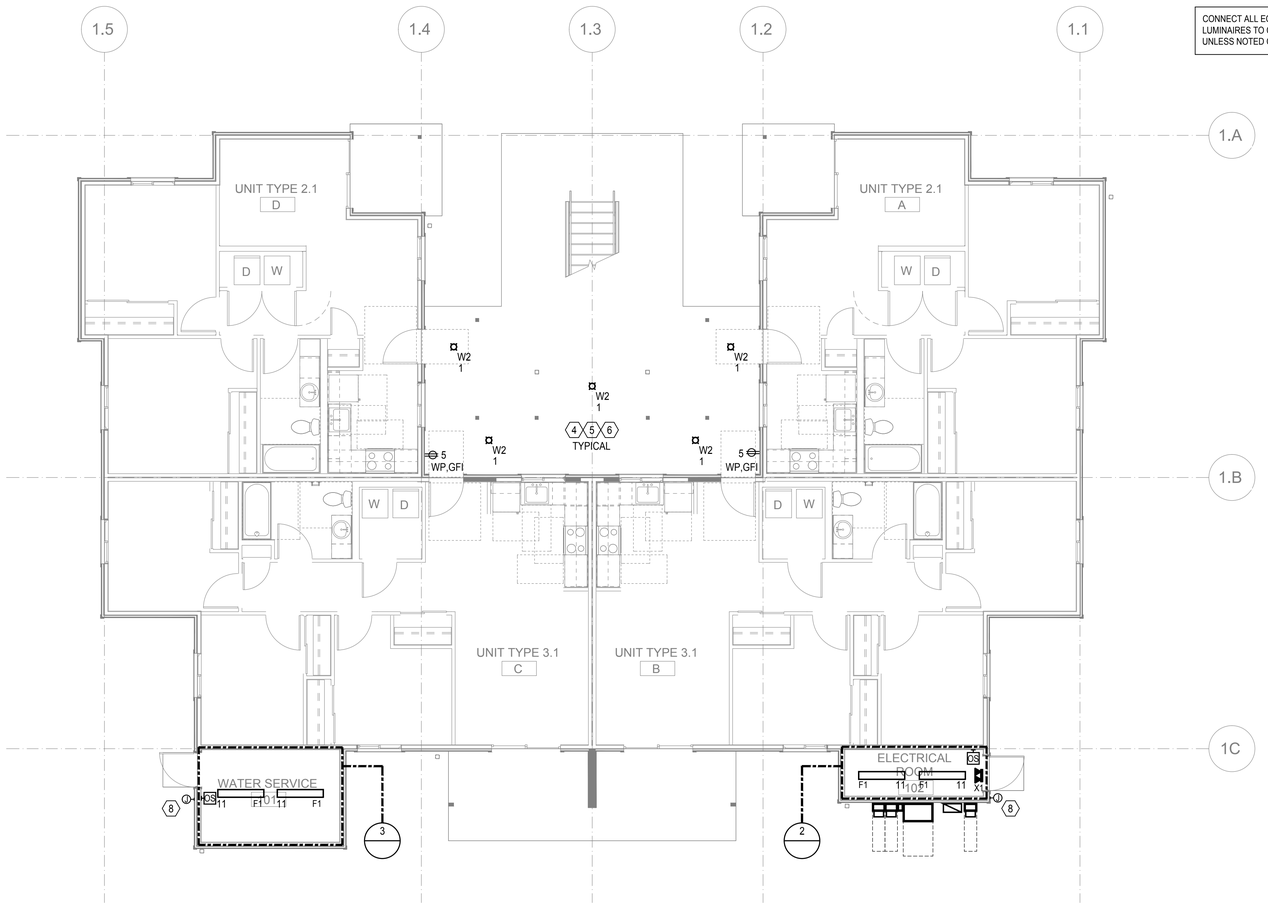


CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H6 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

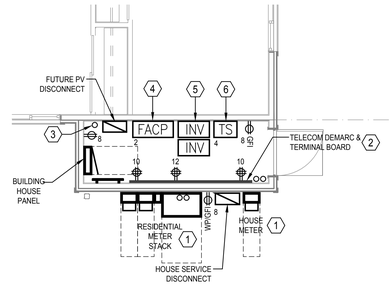
B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

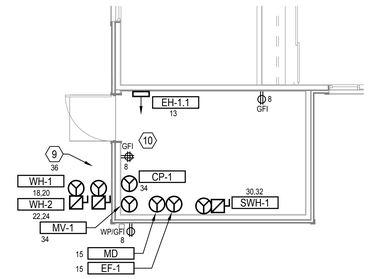
FLAG NOTES (X):

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.
2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 220 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM. TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR LIGHTING FIXTURES TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-220-PB-S-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.
7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.
8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.
10. ELECTRICAL CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



2 E101 ELECTRICAL ROOM

1/4"=1'-0"



3 E101 WATER ROOM

1/4"=1'-0"

POWER AND LIGHTING PLAN - BUILDING 6 - LEVEL 1

SCALE: 3/16"=1'-0"

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

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CONTRACT #: TC2300131

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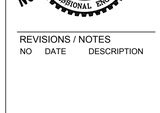
BUILDING 6

BID SET



REVISIONS / NOTES

NO	DATE	DESCRIPTION

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POWER AND LIGHTING PLAN - BUILDING 6 - LEVEL 1

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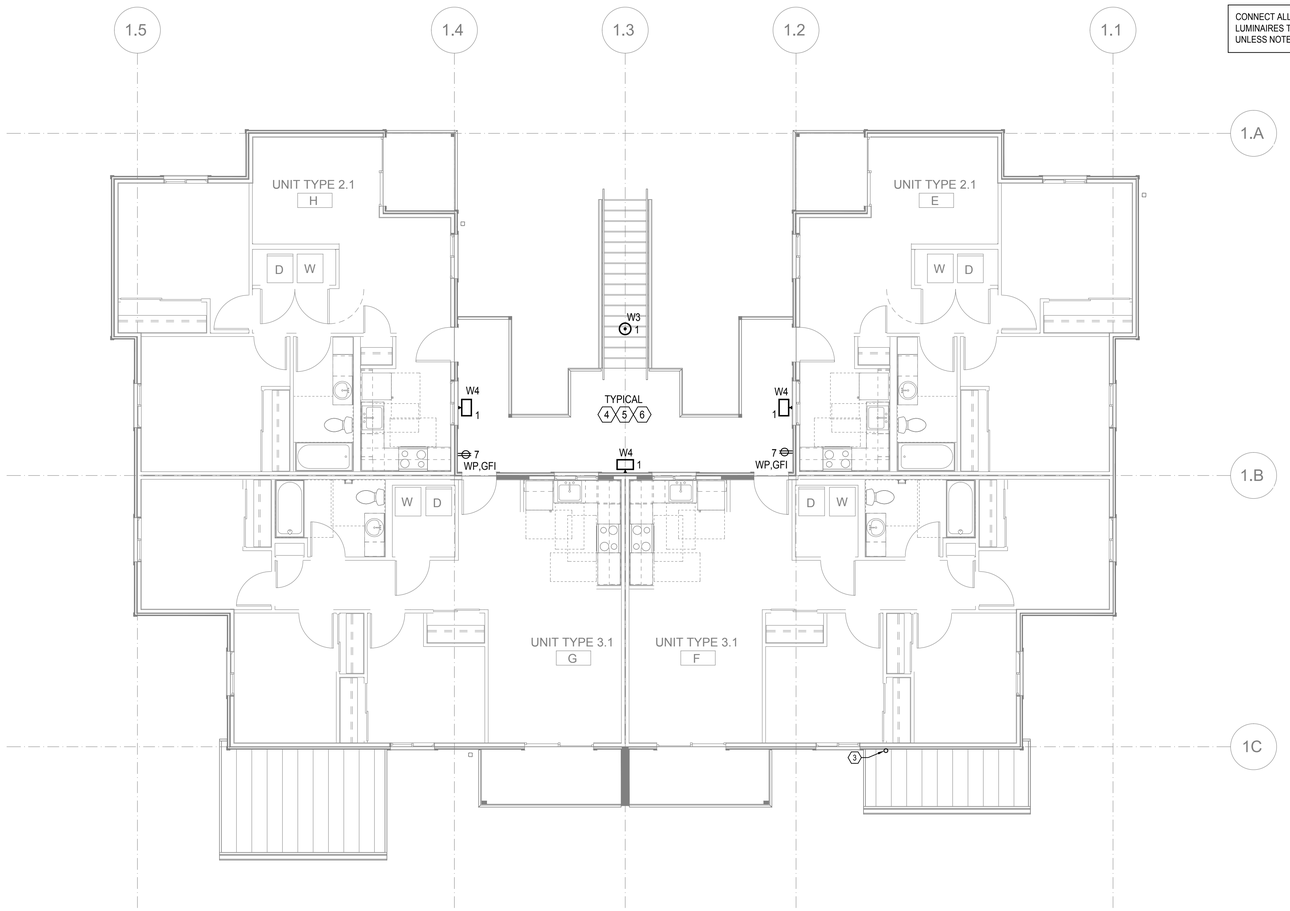

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H6 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. ALL BREEZEWAY AND STAIR LIGHTING TO BE FED BY EMERGENCY LIGHTING INVERTER. SEE LEVEL 1 PLAN FOR LOCATION AND DETAILS.
6. ALL BREEZEWAY LIGHTING TO HAVE AUTOMATIC ON/OFF CONTROL VIA TIME CLOCK. SEE LEVEL 1 PLAN FOR LOCATION.

POWER AND LIGHTING PLAN - BUILDING 6 - LEVEL 2

SCALE: 3/16"=1'-0"

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
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BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

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POWER AND LIGHTING PLAN - BUILDING 6 - LEVEL 2

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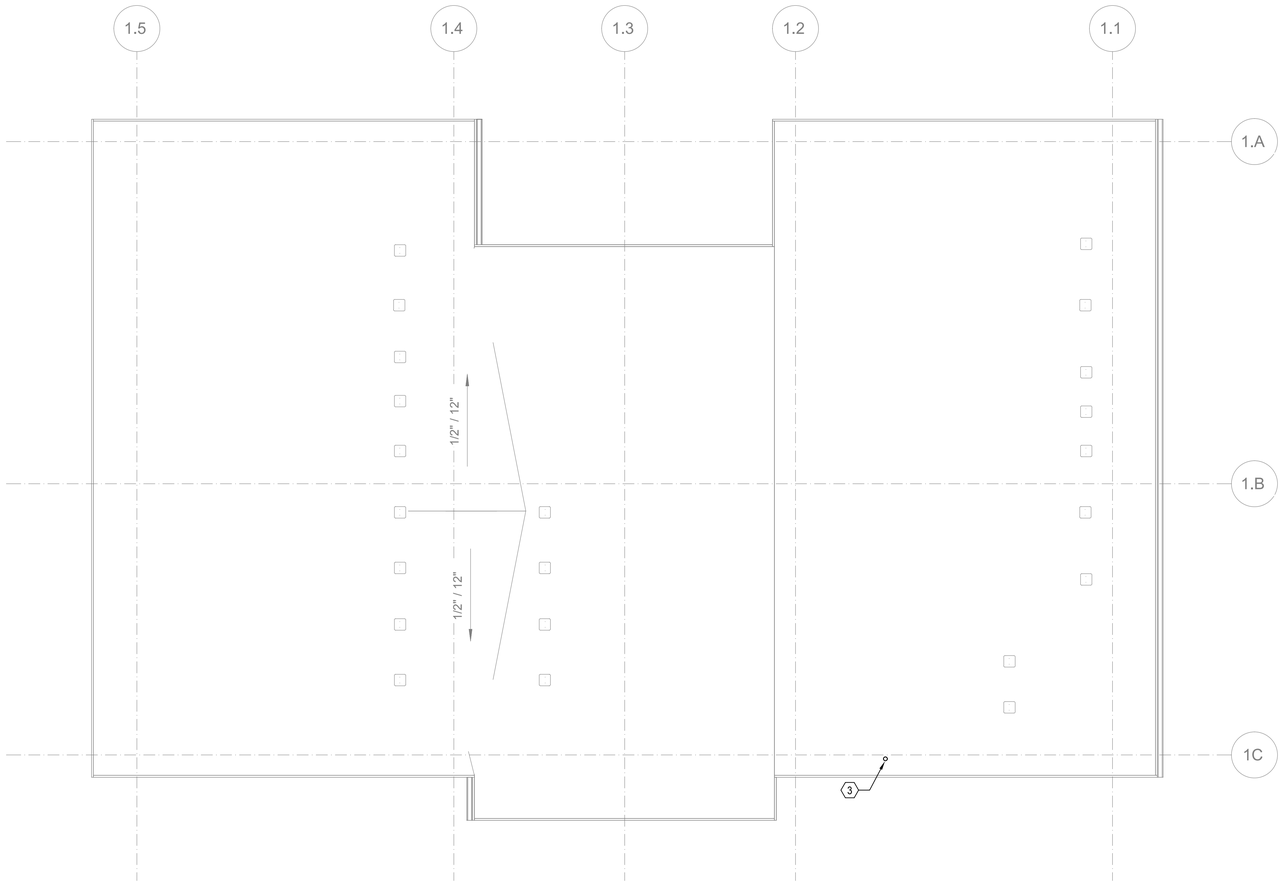

POWER PLAN - BUILDING 6 - ROOF

SCALE: 3/16"=1'-0"

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GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

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FLAG NOTES (X):

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

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POWER PLAN - BUILDING 6 - ROOF

PERMIT #	
DRAWN	RA, JF
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SHEET NO.:

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FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABLOY CONDUCTORS WITH XHHW-2 INSULATION);
CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

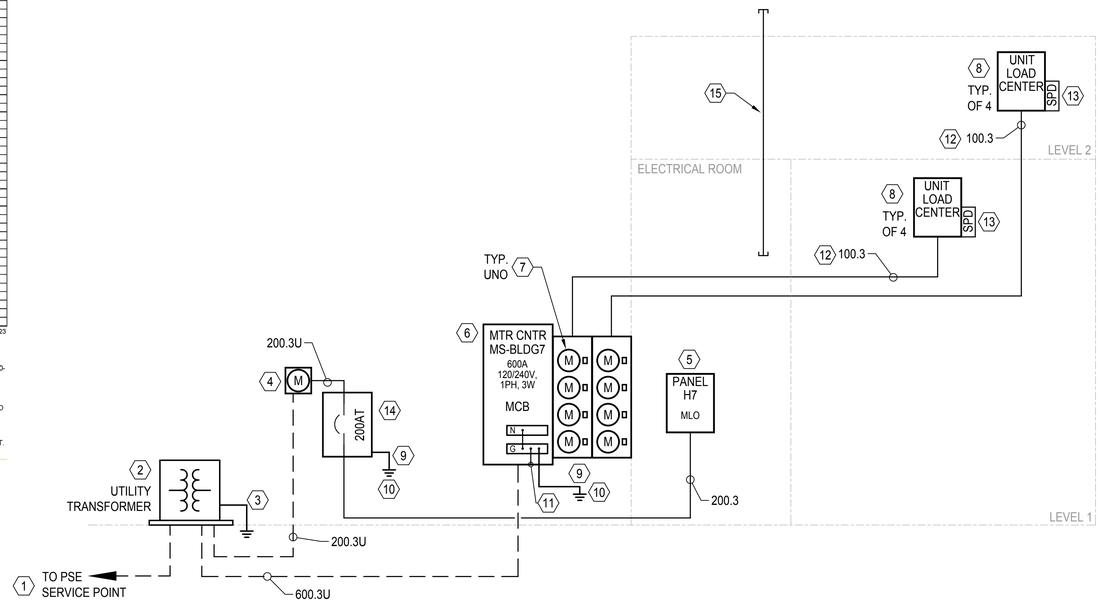
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS, WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH 'U' ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE: NTS

FLAG NOTES (X):

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (8) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 7

BID SET

JOANNA M. [illegible] STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #

DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	E7-003

10/7/2021 7:33:34 AM

LOAD CALCULATIONS - BLDG 7

UNIT TYPE: 2BR - 2.1 AREA (SF): 782 — 4/6/2023
DEMAND LOAD (kVA): 17.93 => 74.7 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	2.35	kVA
SMALL-APPLIANCE CKTS [220.52(A)] = 2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] = 1	CKTS x 1500VA	=	1.50	kVA
	SUBTOTAL (CONNECTED)	=	6.85	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:				
0 - 3,000VA:	100%	=	3.00	kVA
3,001VA - 120,000VA:	35%	=	1.35	kVA
> 120,000VA:	25%	=	0.00	kVA
GENERAL LIGHTING LOAD - DEMAND		=	**4.35**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
			SUBTOTAL (CONNECTED)	=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:			75%		
GENERAL APPLIANCE LOAD - DEMAND				=	**1.65 kVA**

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
GENERAL MOTOR LOAD - DEMAND				=	**0.14 kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51] = 3.91 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA
TOTAL DWELLING UNIT LOAD PER NEC 220, PART III				=	**23.54 kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.48 kVA
DEMAND FACTORS PER NEC 220.82(B):			
0 - 10KVA:	100%	=	10.00 kVA
> 10 kVA:	40%	=	5.39 kVA

ELECTRIC HEAT AND AC [220.82(C)]:

LARGEST LOAD OF OPTIONS: < 4 ELECT SPACE HEATERS: 65% NAMEPLATE		=	2.54 kVA
TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV		=	**17.93 kVA**

UNIT TYPE: 3BR - 3.1 AREA (SF): 906 — 4/6/2023
DEMAND LOAD (kVA): 18.49 => 77.0 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	2.72	kVA
SMALL-APPLIANCE CKTS [220.52(A)] = 2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] = 1	CKTS x 1500VA	=	1.50	kVA
	SUBTOTAL (CONNECTED)	=	7.22	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:				
0 - 3,000VA:	100%	=	3.00	kVA
3,001VA - 120,000VA:	35%	=	1.48	kVA
> 120,000VA:	25%	=	0.00	kVA
GENERAL LIGHTING LOAD - DEMAND		=	**4.48 kVA**	

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
			SUBTOTAL (CONNECTED)	=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:			75%		
GENERAL APPLIANCE LOAD - DEMAND				=	**1.65 kVA**

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
GENERAL MOTOR LOAD - DEMAND				=	**0.14 kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51] = 4.53 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA
TOTAL DWELLING UNIT LOAD PER NEC 220, PART III				=	**24.29 kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.86 kVA
DEMAND FACTORS PER NEC 220.82(B):			
0 - 10KVA:	100%	=	10.00 kVA
> 10 kVA:	40%	=	5.54 kVA

ELECTRIC HEAT AND AC [220.82(C)]:

LARGEST LOAD OF OPTIONS: < 4 ELECT SPACE HEATERS: 65% NAMEPLATE		=	2.94 kVA
TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV		=	**18.49 kVA**

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL MS - 8 unit STACK — 4/6/2023
DEMAND LOAD (kVA): 95.86 => 399.4 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING APPLIANCES 1.6< X < 3.6kW QTY	1.6< X < 3.6kW LOAD (kVA)	3.6kW < X < 8.76kW QTY	3.6kW < X < 8.76kW LOAD (kVA)	8.76kW < X < 12kW QTY	8.76kW < X < 12kW LOAD (kVA)
2BR - 2.1	4	27.38	8.80	0.44	15.64	4	22.00	0	0.00	0	0.00	4	35.20
3BR - 3.1	4	28.87	8.80	0.44	18.12	4	22.00	0	0.00	0	0.00	4	35.20
0								0	0.00	0	0.00	0	0.00
TOTALS:	8	56.26	17.60	0.88	33.76	8	44.00	0	0.00	0	0.00	8	70.40
ADDITIONAL 25% OF LARGEST MOTOR:				0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD		=	222.92 kVA
DEMAND FACTOR FROM TABLE 220.84 =	43%		
TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC		=	**95.86 kVA**

KIRKLAND HEIGHTS - 8 UNIT STACK FLAT (REHAB)
PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 8):	95.86 kVA
(SEE ATTACHED CALCS)	
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.	
RESIDENTIAL TOTAL:	95.86 kVA
	399.40 AMPS @ 120/240V, 1-PHASE
	PROVIDE 600A RESIDENTIAL METER CENTER

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):	
LIGHTING - Breezeway +Interior:	1.5 kVA
LIGHTING - SITE:	1.5 kVA
GENERAL RECEPTACLES:	4.0 kVA
MECHANICAL:	1.0 kVA
ELECT HEAT (WATER RMS):	1.0 kVA
CENTRAL HOT WATER (HPWH)	5.6 kVA
ELECT SWING TANK	4.5 kVA
HEAT TRACE	0.5 kVA
MISCELLANEOUS:	2.5 kVA
EV CHARGING (2):	16.6 kVA
HOUSE TOTAL:	38.71 kVA
	161.30 AMPS @ 120/240V, 1-PHASE
WITH 25% SPARE CAPACITY	48.39 kVA
	201.6208 AMPS @ 120/240V, 1-PHASE
	PROVIDE 200A HOUSE SERVICE
TOTAL BUILDING SERVICE:	144.25 kVA
	601.03 AMPS @ 120/240V, 1-PHASE

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	CONDUCTORS PER SET PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILITY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.
B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H7 — FED FROM: XFR — LOCATION: ELECTRICAL ROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 200 AMPS — M.L.O. OR M.C.B.: M.L.O. — 200 AMPS

CKT #	DESCRIPTION	CONN LOAD TYPE	kVA	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	CONN LOAD TYPE	kVA	DESCRIPTION	CKT #
1	LTG - BREEZEWAY	L	0.15	20.1	20 / 1	A	20 / 1	20.1	N	0.80	FIRE ALARM CONTROL PANEL	2
3	SPARE		0.00		20 / 1	B	20 / 1	20.1	N	0.24	LTG-TIME CLOCK	4
5	RECEPT - LVL 1 BREEZEWAY	R	0.36	20.1	20 / 1	A	20 / 1			0.00	SPARE	6
7	RECEPT - LVL 2 BREEZEWAY	R	0.36	20.1	20 / 1	B	20 / 1	20.1	R	0.54	RECEPTS - ELECT RM	8
9	SPARE		0.00		20 / 1	A	20 / 1	20.1	R	0.72	RECEPTS - TELECOM	10
11	LTG - ELECT / MECH CLOSETS	L	0.24	20.1	20 / 1	B	20 / 1	20.1	R	0.36	RECEPTS - TELECOM	12
13	ELECT HEATER - FIRE SPRINKLER	G	1.50	20.1	20 / 1	A	20 / 1			0.00	SPARE	14
15	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.24	20.1	20 / 1	B	20 / 1	20.1	R	0.72	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-1	18
19	SPARE		0.00		20 / 1	B						20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20.1	20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-2	22
23	LTG - SITE POLES	L	0.30	20.1	20 / 1	B						24
25	SPARE		0.00		20 / 1	A	20 / 1			0.00	SPARE	26
27	SPARE		0.00		20 / 1	B	20 / 1			0.00	SPARE	28
29	SPACE ONLY					A	30 / 2	30.2N	C	4.50	MH SWING TANK - SMH-1	30
31	SPACE ONLY					B						32
33	SPACE ONLY					A	20 / 1	20.1	N	0.36	CIRC PUMP CP-1 & MIX VALVE MV-1	34
35	SPACE ONLY					B	20 / 1	20.1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

		CONNECTED LOAD	DEMAND FACTOR	DEMAND LOAD	
L	= LIGHTING	0.69	kVA 125%	0.86	kVA
R	= RECEPTACLES	3.78	kVA NEC 220.44	3.78	kVA
M	= MOTORS	0.24	kVA 100%	0.24	kVA
	PLUS 25% OF LARGEST MOTOR	0.24	kVA 25%	0.06	kVA
C	= CONTINUOUS	9.46	kVA 125%	11.82	kVA
N	= NON-CONTINUOUS	1.44	kVA 100%	1.44	kVA
K	= KITCHEN	0.00	kVA 75%	0.00	kVA

PANEL CONNECTED TOTAL: 15.61 kVA, 65.03 AMPS
PANEL DEMAND TOTAL: 18.20 kVA, 75.84 AMPS

NOTES:
A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.
CIRCUIT NOTES (X):
1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER.

LOAD CENTER - 2 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O. OR M.C.B.: M.L.O. — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN'L TG RECEPTS, SD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ERV, MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	30.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	DED. RECEPT - AC UNIT (BY TENANT)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B				20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.
CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 5FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

LOAD CENTER - 3 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O. OR M.C.B.: M.L.O. — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN'L TG RECEPTS, SD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ERV, MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	30.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.
CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 5FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
ERV-1	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.163					2
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS. CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES. DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	kW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	240 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3

NOTES:
1. CONFIRM EXACT LOCATION WITH ARCHITECT.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 8 UNIT STACKED FLATS

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES BED 1	BED 2	BED 3	LIVING
A	2-BDRM	CH-0.84	CH-0.7		CH-1.8
B	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
C	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
D	2-BDRM	CH-0.84	CH-0.7		CH-1.8
E	2-BDRM	CH-0.7	CH-0.56		CH-1.12
F	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
G	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
H	2-BDRM	CH-0.7	CH-0.56		CH-1.12

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.
B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 7

BID SET

REGINNA M. BYERS — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

REVISIONS / NOTES

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED. MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/830 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE & SPECS FOR ALL 'S' LIGHTING FIXTURES.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

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KIRKLAND HEIGHTS APARTMENTS
13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 7
BID SET

GEORGINNA M. LEE · STATE OF WASHINGTON · 43761 · REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

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TITLE
LUMINAIRE SCHEDULE

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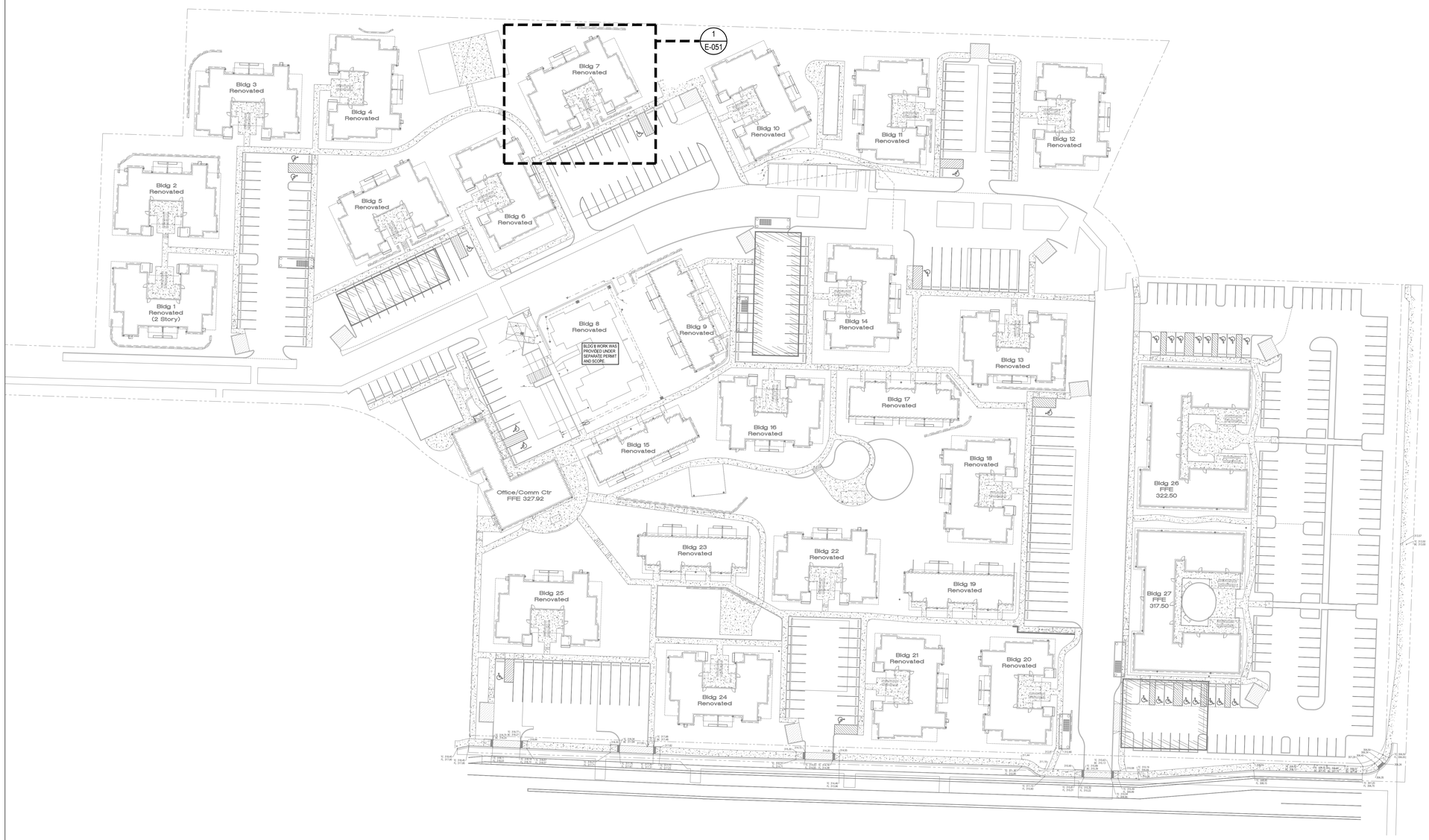

OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
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BID SET

PROGINNA M. JOHNSON — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

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OVERALL PROJECT SITE PLAN

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ELECTRICAL SITE PLAN - BUILDING 7

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

FLAG NOTES (X):

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St., Kirkland, WA 98034

BUILDING 7

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

ELECTRICAL SITE PLAN - BUILDING 7

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E7-051

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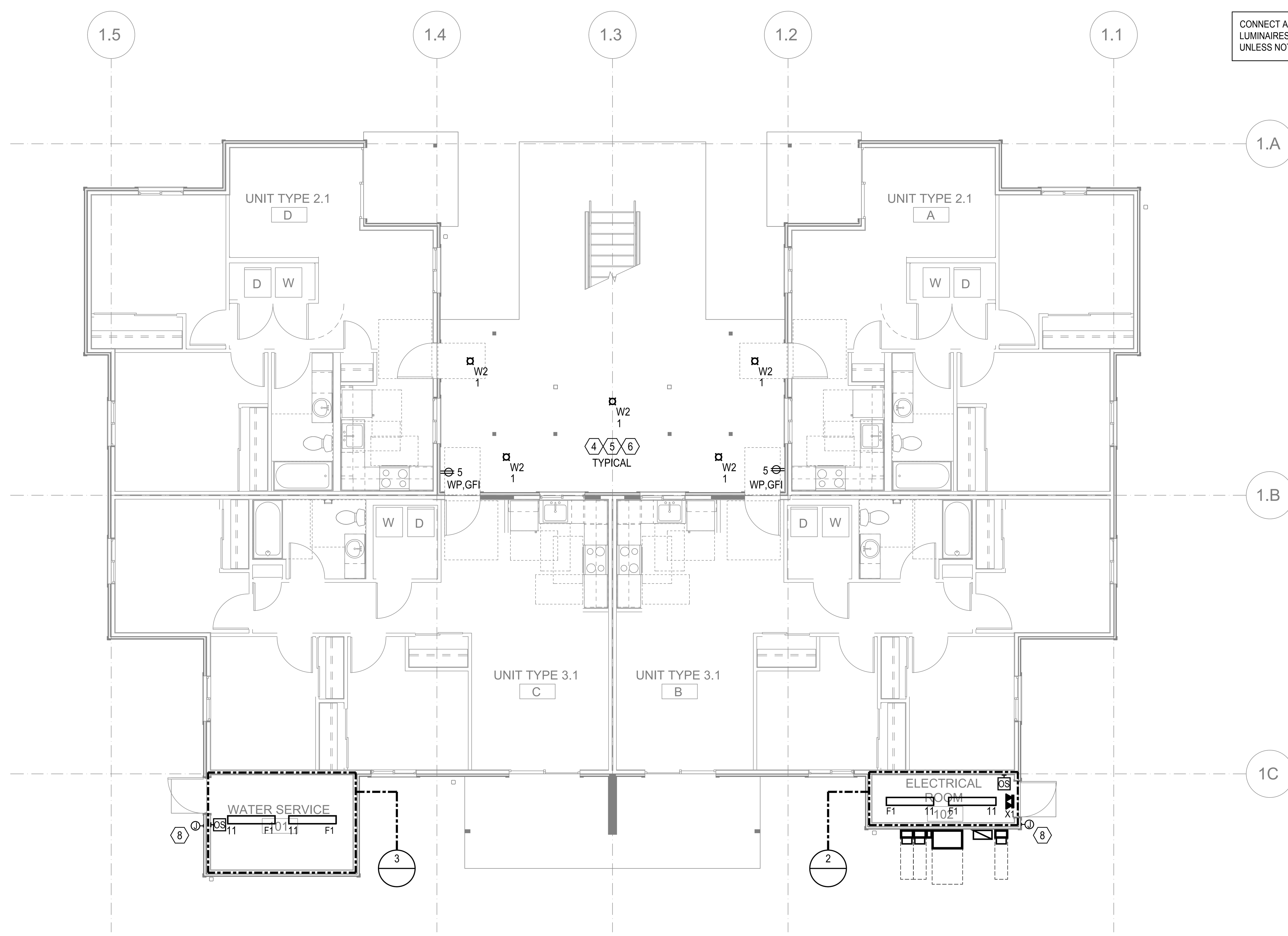
CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H7 UNLESS NOTED OTHERWISE.



POWER AND LIGHTING PLAN - BUILDING 7 - LEVEL 1

SCALE: 3/16"=1'-0"

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.

2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.

3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.

5. PROVIDE (1) 220 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR LIGHTING FIXTURES TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-220-PB-S-SD

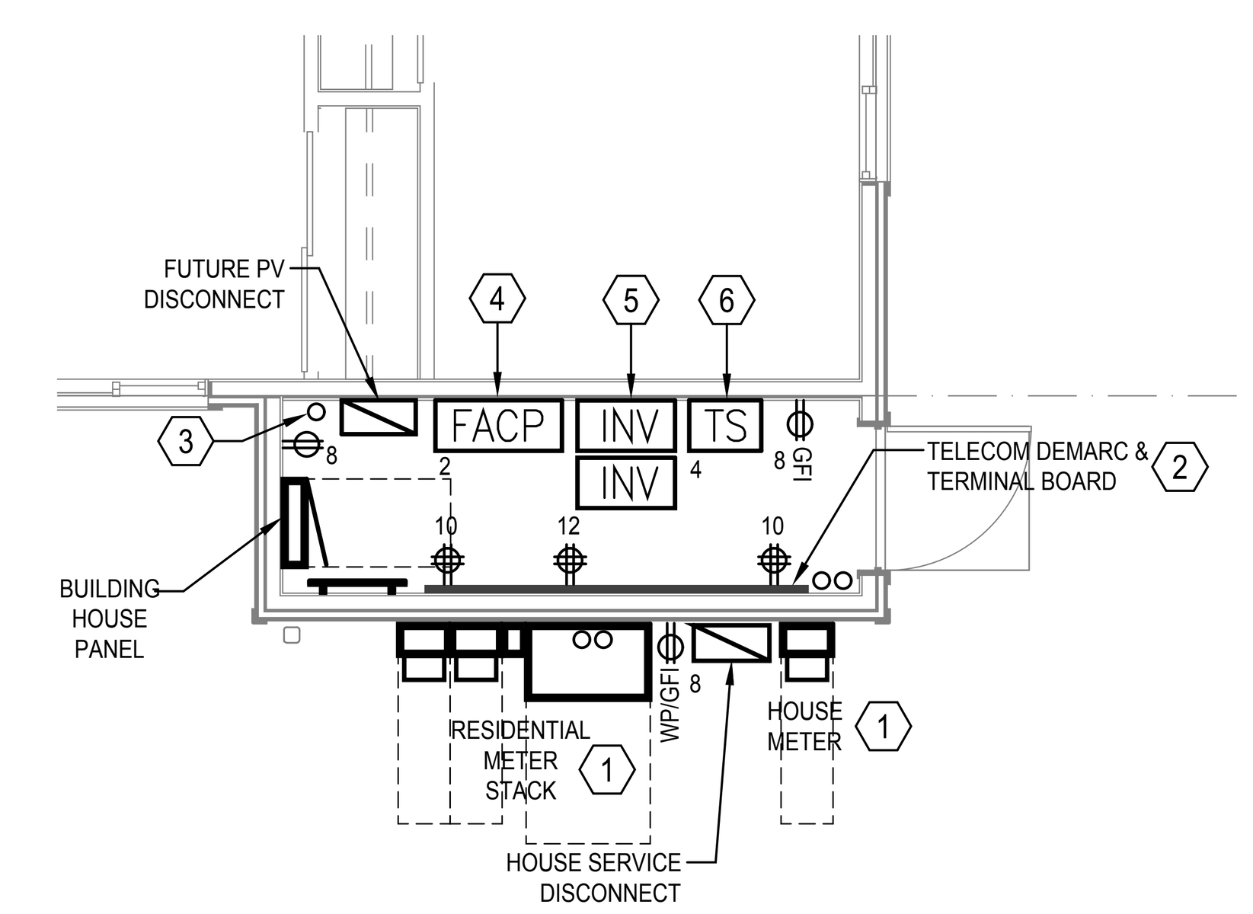
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.

7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.

8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.

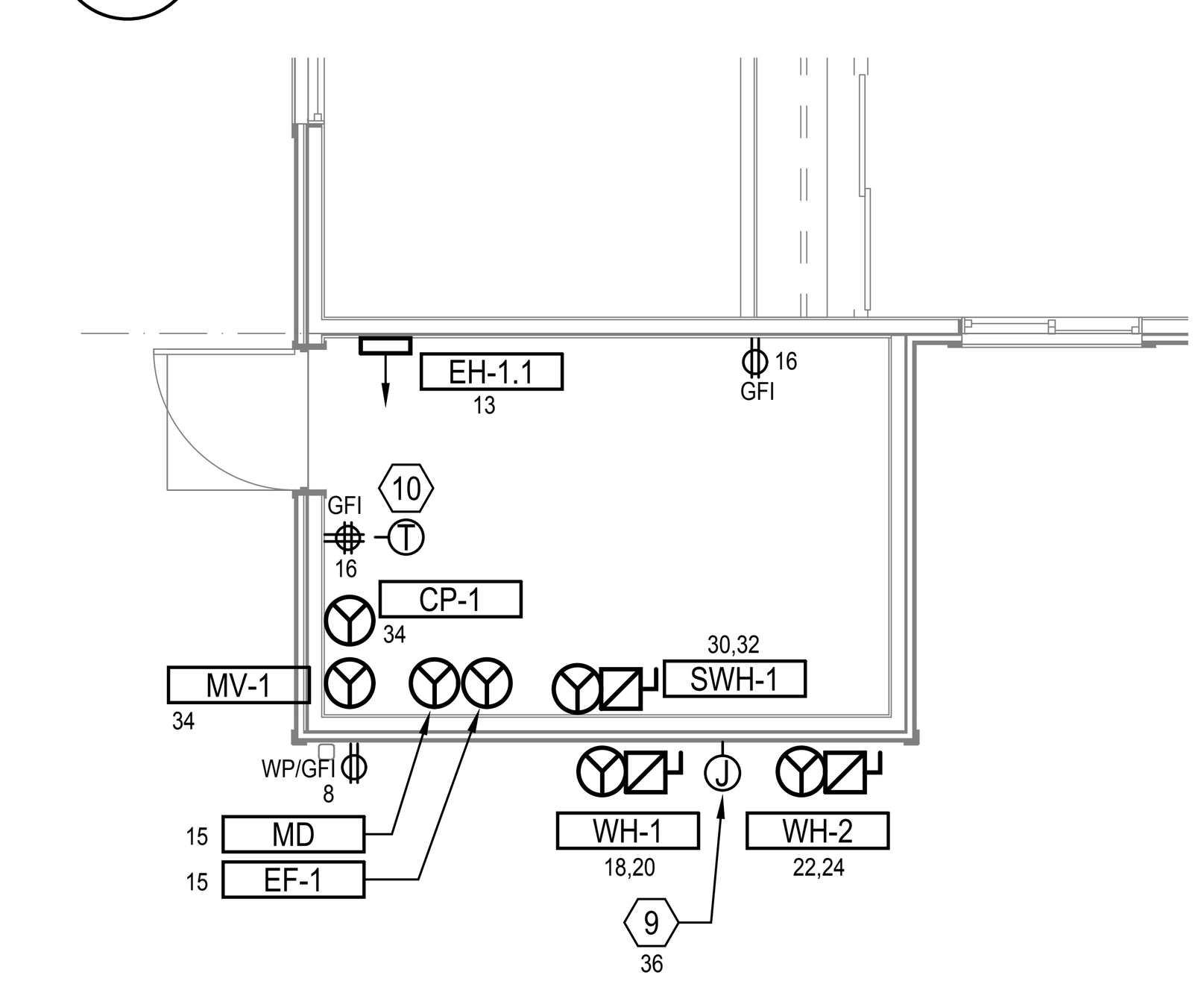
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.

10. ELECTRICAL CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



2 / E101 ELECTRICAL ROOM

1/4"=1'-0"



3 / E101 WATER ROOM

1/4"=1'-0"

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St., Kirkland, WA 98034

BUILDING 7

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

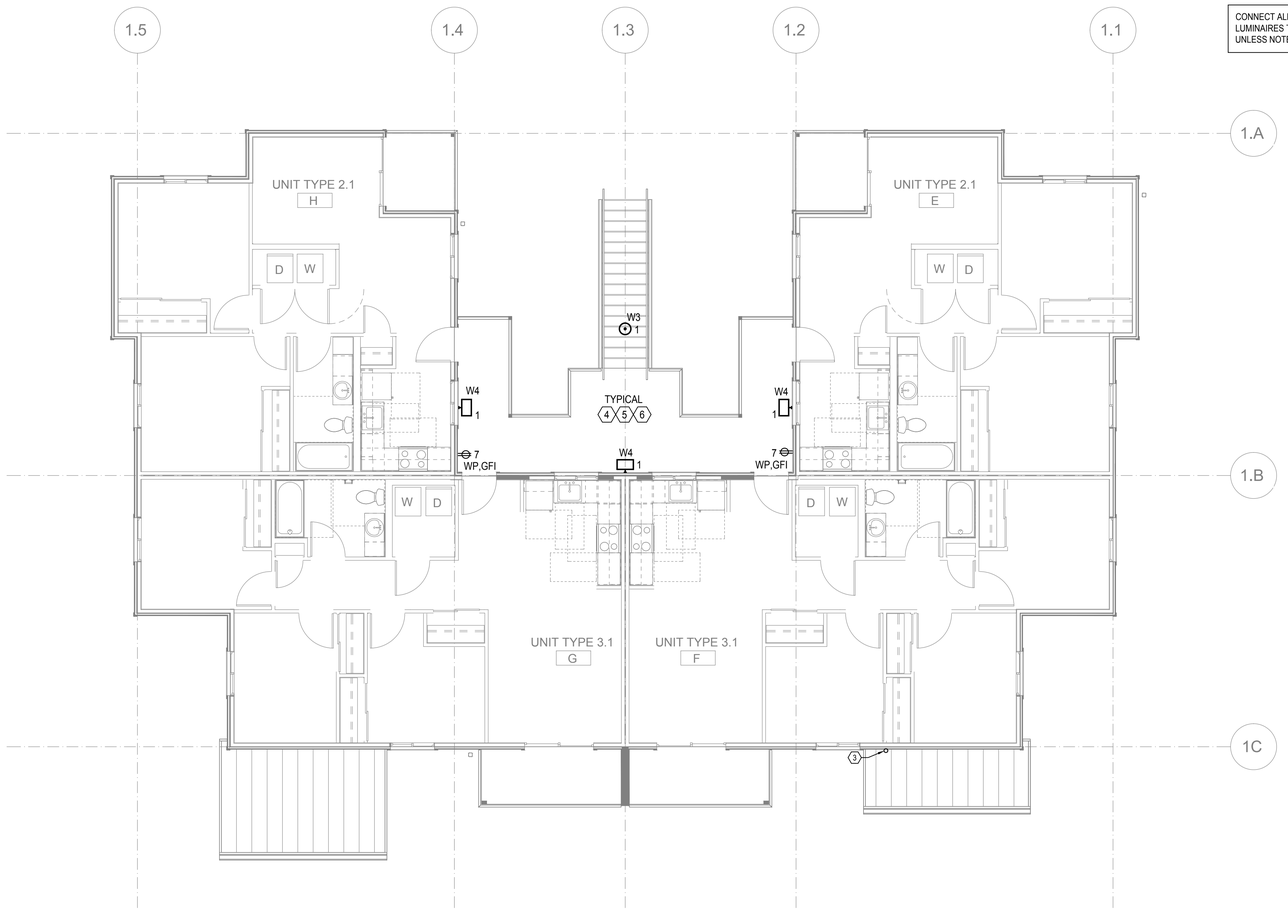
TITLE

POWER AND LIGHTING PLAN - BUILDING 7 - LEVEL 1

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E7-101

10/7/2021 7:33:34 AM



CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H7 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

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FLAG NOTES (X):

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. ALL BREEZEWAY AND STAIR LIGHTING TO BE FED BY EMERGENCY LIGHTING INVERTER. SEE LEVEL 1 PLAN FOR LOCATION AND DETAILS.
6. ALL BREEZEWAY LIGHTING TO HAVE AUTOMATIC ON/OFF CONTROL VIA TIME CLOCK. SEE LEVEL 1 PLAN FOR LOCATION.

POWER AND LIGHTING PLAN - BUILDING 7 - LEVEL 2

SCALE: 3/16"=1'-0"

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

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BUILDING 7

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

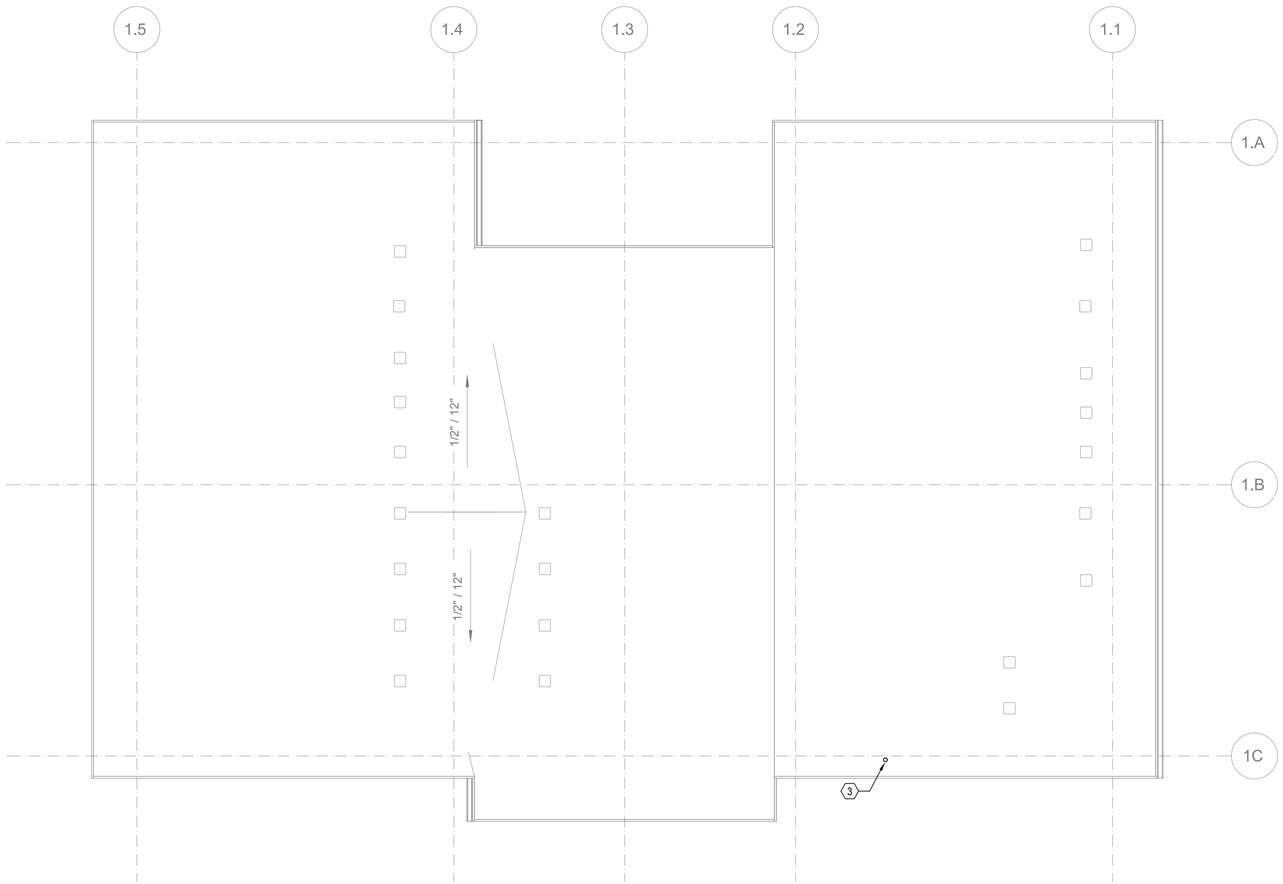
DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 7 - LEVEL 2

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E7-102



POWER PLAN - BUILDING 7 - ROOF

SCALE: 3/16"=1'-0"

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

GENERAL NOTES:

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B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

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FLAG NOTES (X):

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

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POWER PLAN - BUILDING 7 - ROOF

PERMIT #	
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CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016

SHEET NO.:

E7-103

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FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	CONDUCTORS PER SET: PHASE / NEUTRAL (N) (QTY) SIZE	CONDUCTORS PER SET: GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION);
CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

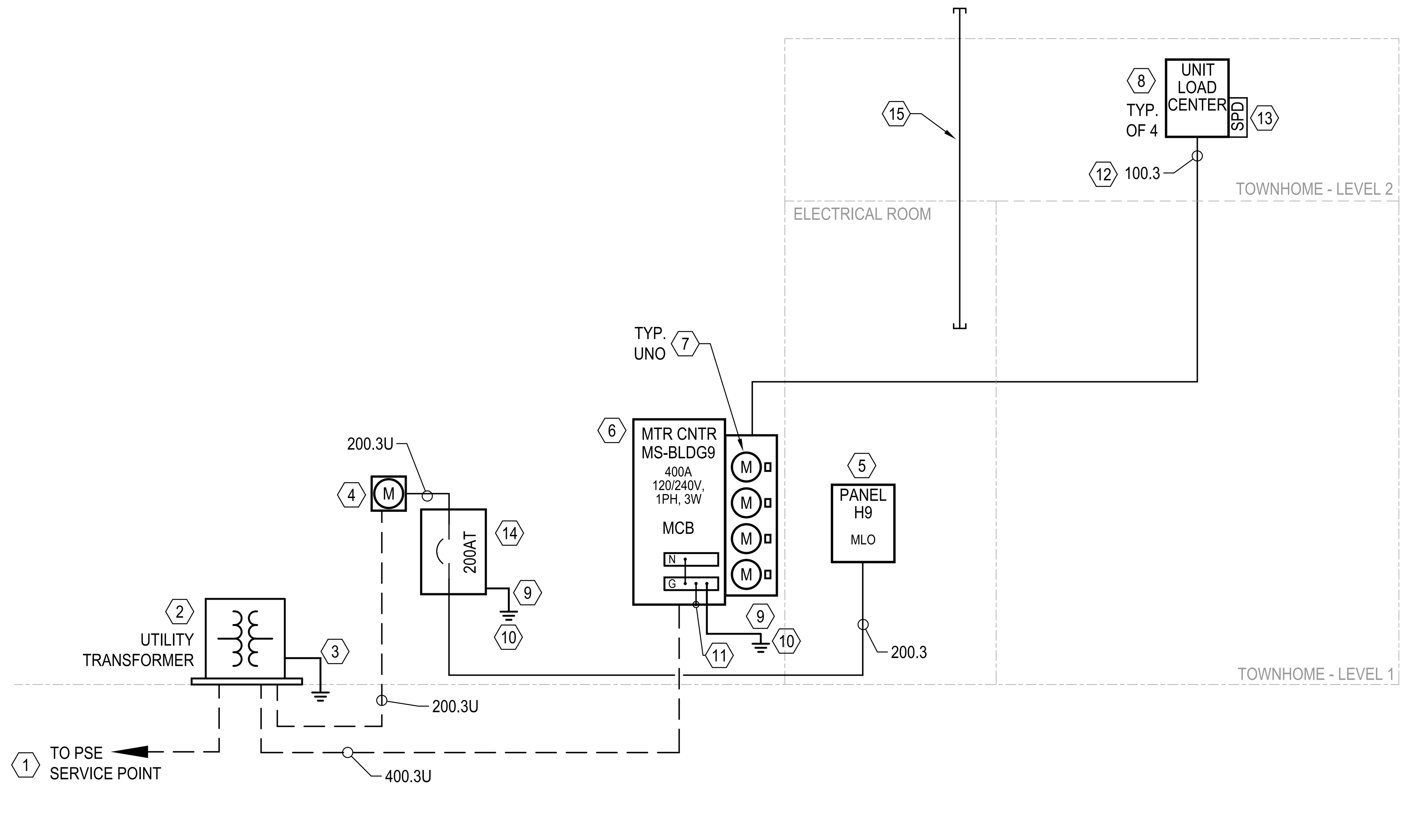
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM
SCALE:NTS

FLAG NOTES (X) :

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (4) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 9

UNIT TYPE: TOWNHOUSE UNIT **AREA (SF):** 1,211 — 4/6/2023
DEMAND LOAD (kVA): 18.81 => 78.4 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	3.63	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2 CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1 CKTS x 1500VA	=	1.50	kVA
SUBTOTAL (CONNECTED)		=	8.13	kVA

LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:

0 - 3,000VA:	100%	=	3.00	kVA
3,001VA - 120,000VA:	35%	=	1.80	kVA
> 120,000VA:	25%	=	0.00	kVA
GENERAL LIGHTING LOAD - DEMAND		**=**	**4.80**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)			
REFRIGERATOR	1	AT	0.7	=	0.70	kVA
RANGE HOOD	1	AT	0.3	=	0.30	kVA
MICROWAVE		AT		=	0.00	kVA
DISHWASHER	1	AT	1.2	=	1.20	kVA
WASHER	1	AT	1.2	=	1.20	kVA
GARBAGE DISPOSAL		AT		=	0.00	kVA
WATER HEATER		AT		=	0.00	kVA
SUBTOTAL (CONNECTED)				=	3.40	kVA
APPLIANCE DEMAND FACTOR [220.53]:			75%			
GENERAL APPLIANCE LOAD - DEMAND				**=**	**2.55**	**kVA**

MOTORS [220.50]:

	QTY		LOAD (kVA EACH)			
TOILET EXHAUST FAN		AT		=	0.00	kVA
ERV UNIT	1	AT	0.11	=	0.11	kVA
KITCHEN EXHAUST FAN		AT		=	0.00	kVA
+25% OF LARGEST MOTOR				=	0.03	kVA
GENERAL MOTOR LOAD - DEMAND				**=**	**0.14**	**kVA**

	QTY		LOAD (kVA EACH)			
100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	6.06	kVA
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50	kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00	kVA
ELECTRIC OVEN [220.55]		AT		=	0.00	kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00	kVA
TOTAL DWELLING UNIT LOAD PER NEC 220, PART III				**=**	**27.04**	**kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	25.97	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	6.39	kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	> = 4 ELECT SPACE HEATERS; 40% NAMEPLATE	=	2.42	kVA
TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV		**=**	**18.81**	**kVA**

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL — MS- 4 unit TOWNHOUSE — 4/6/2023
DEMAND LOAD (kVA): 57.61 => 240.0 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS: QTY	CLOTHES DRYERS: LOAD (kVA)	COOKING 1.5< X < 3.5kW: QTY	COOKING 1.5< X < 3.5kW: LOAD (kVA)	COOKING 3.5kW < X < 8.75kW: QTY	COOKING 3.5kW < X < 8.75kW: LOAD (kVA)	COOKING 8.75kW < X < 12kW: QTY	COOKING 8.75kW < X < 12kW: LOAD (kVA)
0								0	0.00	0	0.00	0	0.00
TOWNHOUSE UNIT	4	32.53	13.60	0.44	24.22	4	22.00	0	0.00	0	0.00	4	35.20
0								0	0.00	0	0.00	0	0.00
TOTALS:	4	32.53	13.60	0.44	24.22	4	22.00	0	0.00	0	0.00	4	35.20
	ADDITIONAL 25% OF LARGEST MOTOR:			0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD = 128.02 kVA
DEMAND FACTOR FROM TABLE 220.84 = 45%

TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC = 57.61 kVA

KIRKLAND HEIGHTS - TOWNHOUSE BLDG (REHAB)
PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 4):	57.61 kVA
(SEE ATTACHED CALCS)	
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.	
RESIDENTIAL TOTAL:	57.61 kVA
	240.04 AMPS @ 120/240V, 1-PHASE
	PROVIDE 400A RESIDENTIAL METER CENTER

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):	
LIGHTING - Breezeway +Interior:	0.5 kVA
LIGHTING - SITE:	1.0 kVA
GENERAL RECEPTACLES:	1.0 kVA
MECHANICAL:	kVA
ELECT HEAT (WATER RMS):	1.0 KVA
CENTRAL HOT WATER (HPWH)	5.3 KVA
ELECT SWING TANK	4.5 KVA
HEAT TRACE	0.5 kVA
MISCELLANEOUS:	2.0 kVA
EV CHARGING (2):	16.64 kVA
HOUSE TOTAL:	32.41 kVA
	89.96 AMPS @ 120/240V, 1-PHASE
WITH 25% SPARE CAPACITY	40.51 kVA
	112.4556 AMPS @ 120/240V, 1-PHASE
	PROVIDE 200A HOUSE SERVICE
TOTAL BUILDING SERVICE:	98.12 kVA
	272.36 AMPS @ 120/240V, 1-PHASE

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS
13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 9
BID SET

GEORGINA M. ... STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE
SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	E9-003

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	CONDUCTORS PER SET PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.
B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H9
NORMAL POWER — VOLTAGE: 120 / 240 V — FED FROM: XFR — LOCATION: ELECTRICAL ROOM
AIC: SEE SINGLE-LINE DIAGRAM — BUS RATING: 200 AMPS — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
M.O.D.P. MCB: MLO 200 AMPS

CKT #	DESCRIPTION	CONN LOAD TYPE	kVA	CKT TAG	CB AMPS/#P	PH	CB AMPS/#P	CKT TAG	CONN LOAD TYPE	kVA	DESCRIPTION	CKT #
1	LTG - ELECT / MECH CLOSETS	L	0.12	20.1	20 / 1	A	20 / 1	20.1	N	0.80	FIRE ALARM CONTROL PANEL	2
3	ELECT HEATER - FIRE SPRINKLER	C	1.50	20.1	20 / 1	B	20 / 1			0.00	SPARE	4
5	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.12	20.1	20 / 1	A	20 / 1			0.00	SPARE	6
7	SPARE		0.00		20 / 1	B	20 / 1	20.1	R	0.54	RECEPTS - ELECT RM	8
9	SPARE		0.00		20 / 1	A	20 / 1	20.1	R	0.36	RECEPTS - TELECOM	10
11	SPARE		0.00		20 / 1	B	20 / 1	20.1	R	0.36	RECEPTS - TELECOM	12
13	SPARE		0.00		20 / 1	A	20 / 1			0.00	SPARE	14
15	SPARE		0.00		20 / 1	B	20 / 1	20.1	R	0.54	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-1	18
19	SPARE		0.00		20 / 1	B						20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20.1	20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-2	22
23	SPARE		0.00		20 / 1	B						24
25	SPARE		0.00		20 / 1	A	20 / 1			0.00	SPARE	26
27	SPARE		0.00		20 / 1	B	20 / 1			0.00	SPARE	28
29	SPACE ONLY					A	30 / 2	30.2	C	4.50	WASHING TANK - SWH-1	30
31	SPACE ONLY					B						32
33	SPACE ONLY					A	20 / 1	20.1	N	0.36	CIRC PUMP CP-1 & MX VALVE - MV-1	34
35	SPACE ONLY					B	20 / 1	20.1	R	0.72	HEAT TRACE - HEAT PUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

		CONNECTED LOAD		DEMAND FACTOR	DEMAND LOAD	
L	= LIGHTING	0.12	kVA	125%	0.15	kVA
R	= RECEPTACLES	2.52	kVA	NEC 220.44	2.52	kVA
M	= MOTORS	0.12	kVA	100%	0.12	kVA
	PLUS 25% OF LARGEST MOTOR	0.12	kVA	25%	0.03	kVA
C	= CONTINUOUS	9.46	kVA	125%	11.82	kVA
N	= NON-CONTINUOUS	1.20	kVA	100%	1.20	kVA
K	= KITCHEN	0.00	kVA	75%	0.00	kVA

PANEL CONNECTED TOTAL:
13.42 kVA
55.90 AMPS

PANEL DEMAND TOTAL:
15.54 kVA
65.00 AMPS

NOTES:
A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER

LOAD CENTER - 4 BEDROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
AIC: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
M.O.D.P. MCB: MLO 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN'L LTG, RECEPTS, SD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ENV. MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.1	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19	BEDROOM 4 RECEPTS, LTS, SD (1)	20.1	20 / 1	B	20 / 1	20.1	DED RECEPT - AV LINT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A	20 / 1	20.1	HEAT - KITCHEN, BATH (1)	22
23	"			B			"	24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 8FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-2	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.135					2
			/						
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS; CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES; DISCONNECT SHALL BE ACCESSIBLE & AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H X 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H X 118"L	1, 4
EWH-T	DWELLING UNITS	KING	PAW WALL HEATER	0.25	120 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	120 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 5

NOTES:
1. CONFIRM EXACT LOCATION WITH ARCHITECT.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 4 UNIT TOWNHOMES

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES BED 1	BED 2	BED 3	BED 4	KITCHEN	BATH	LIVING
A	4-BDRM	CH-0.93	CH-0.56	CH-0.56	CH-0.93	EWH-T	EWH-T	CH-1.4
B	4-BDRM	CH-0.7	CH-0.7	CH-0.7	CH-0.7	EWH-T	EWH-T	CH-1.12
C	4-BDRM	CH-0.7	CH-0.7	CH-0.7	CH-0.7	EWH-T	EWH-T	CH-1.12
D	4-BDRM	CH-0.93	CH-0.56	CH-0.56	CH-0.93	EWH-T	EWH-T	CH-1.4

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.
B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 9

BID SET

VIRGINNA M. JOHNSON — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

REVISIONS / NOTES

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/630 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE
& SPECS FOR ALL 'S' LIGHTING FIXTURES.

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
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General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
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KIRKLAND HEIGHTS APARTMENTS

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Kirkland, WA 98034

BUILDING 9

BID SET

GEORGINNA M. TAYLOR
STATE OF WASHINGTON
43761
REGISTERED
PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES
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LUMINAIRE SCHEDULE

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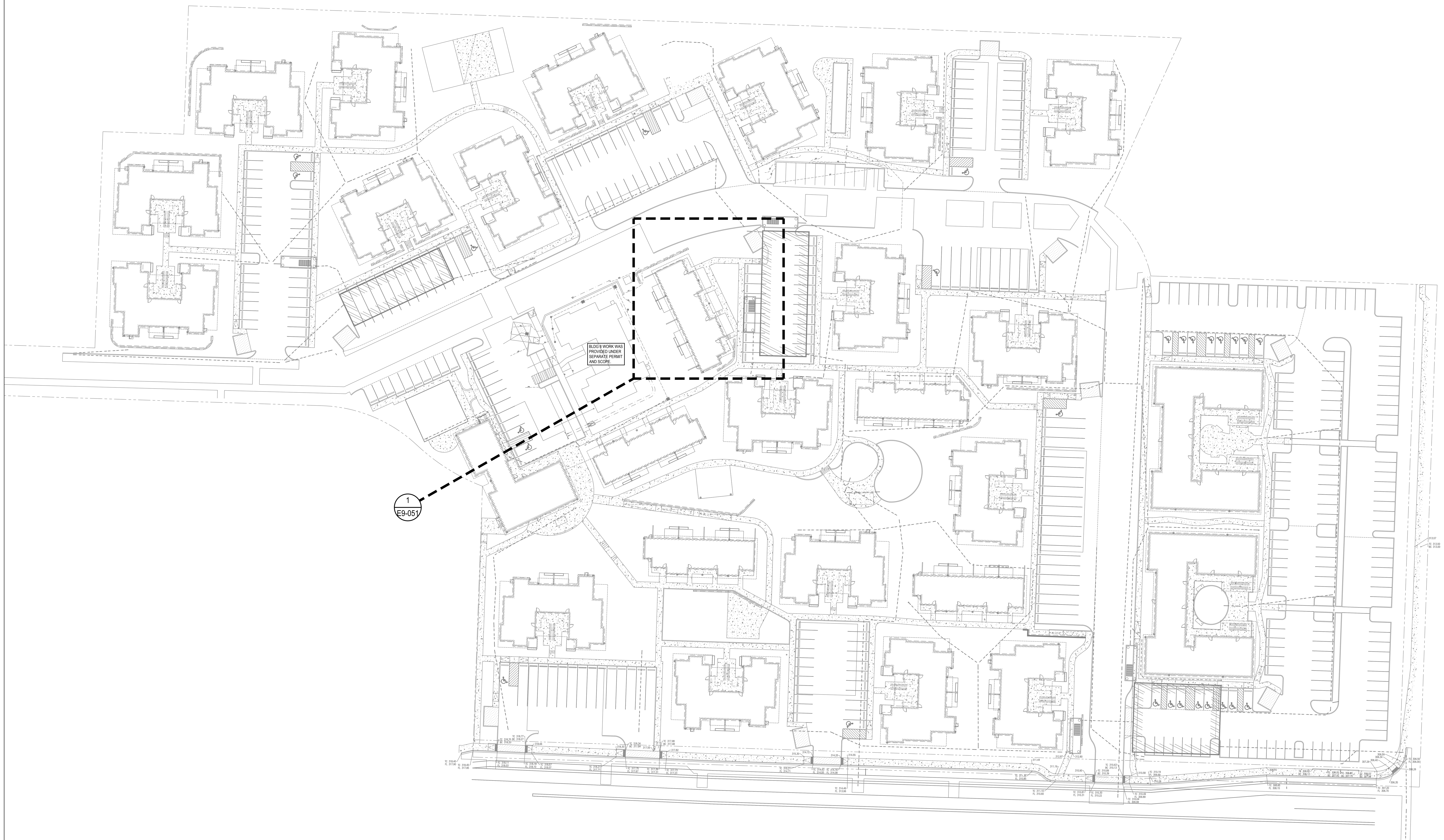
E9-005



OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

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OVERALL PROJECT SITE PLAN

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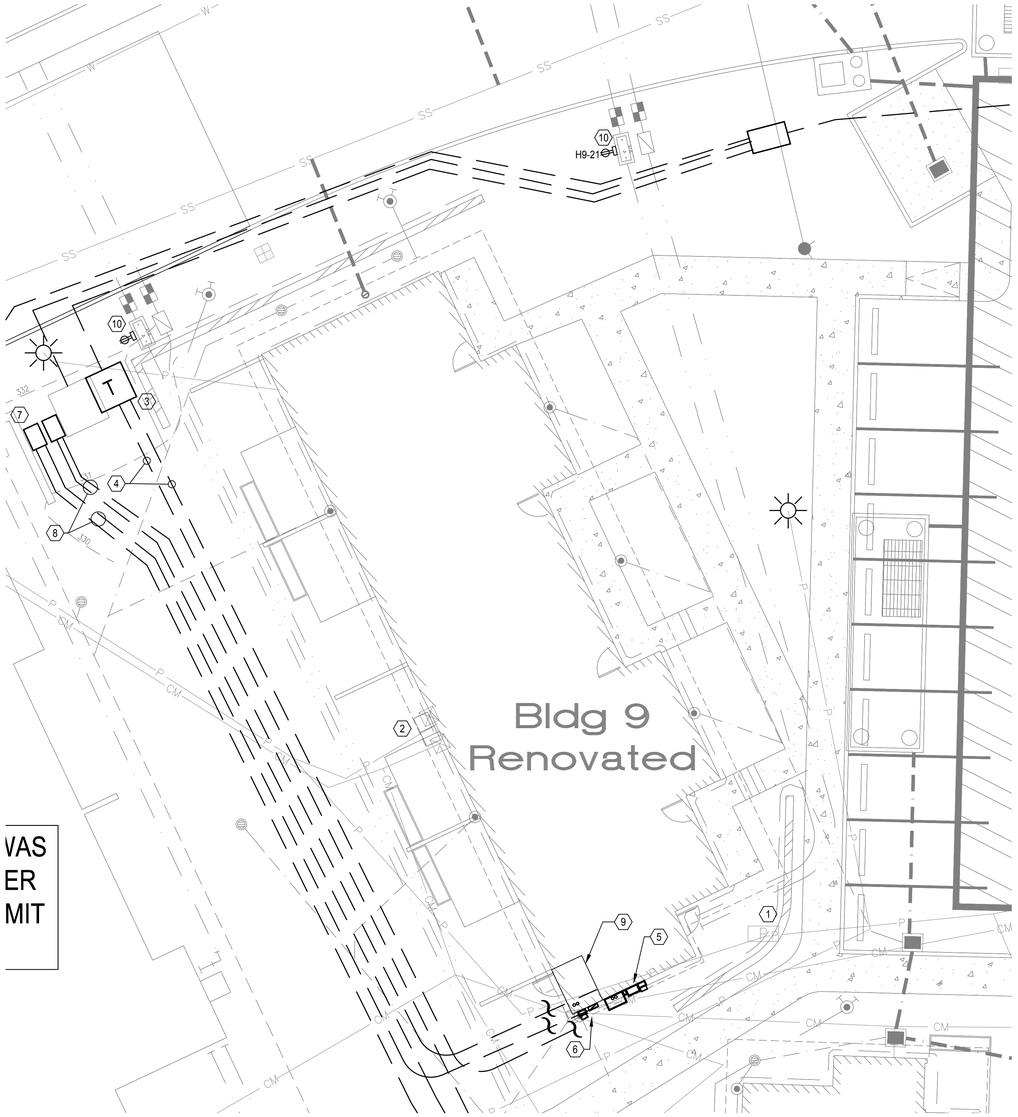
ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.



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ELECTRICAL SITE PLAN - BUILDING 9

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

FLAG NOTES (X):

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

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New Kirkland Heights LLLP
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ELECTRICAL SITE PLAN - BUILDING 9

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SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H9 UNLESS NOTED OTHERWISE.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES ⟨X⟩:

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.

2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.

3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.

5. NOT USED

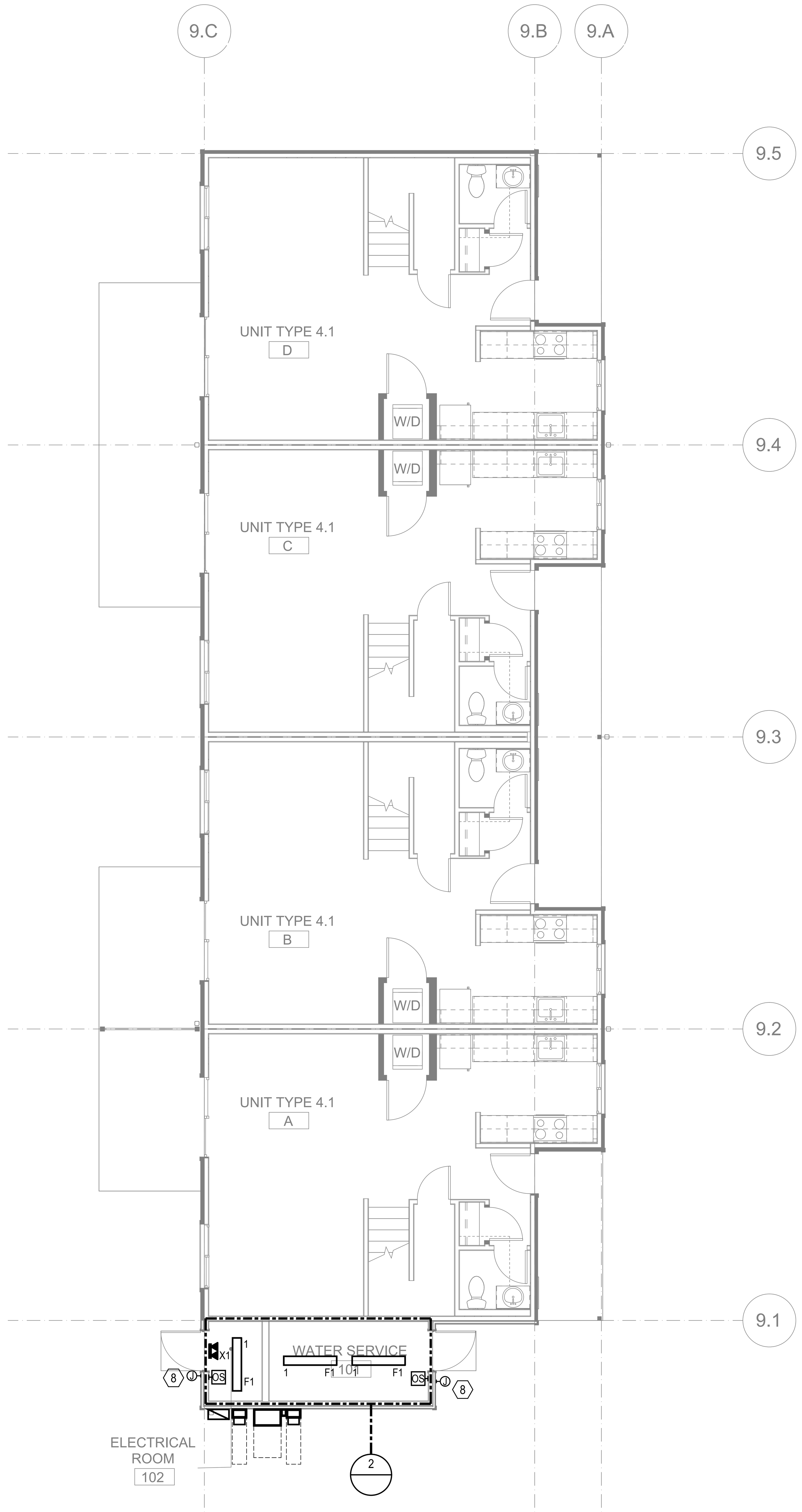
6. NOT USED.

7. NOT USED.

8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.

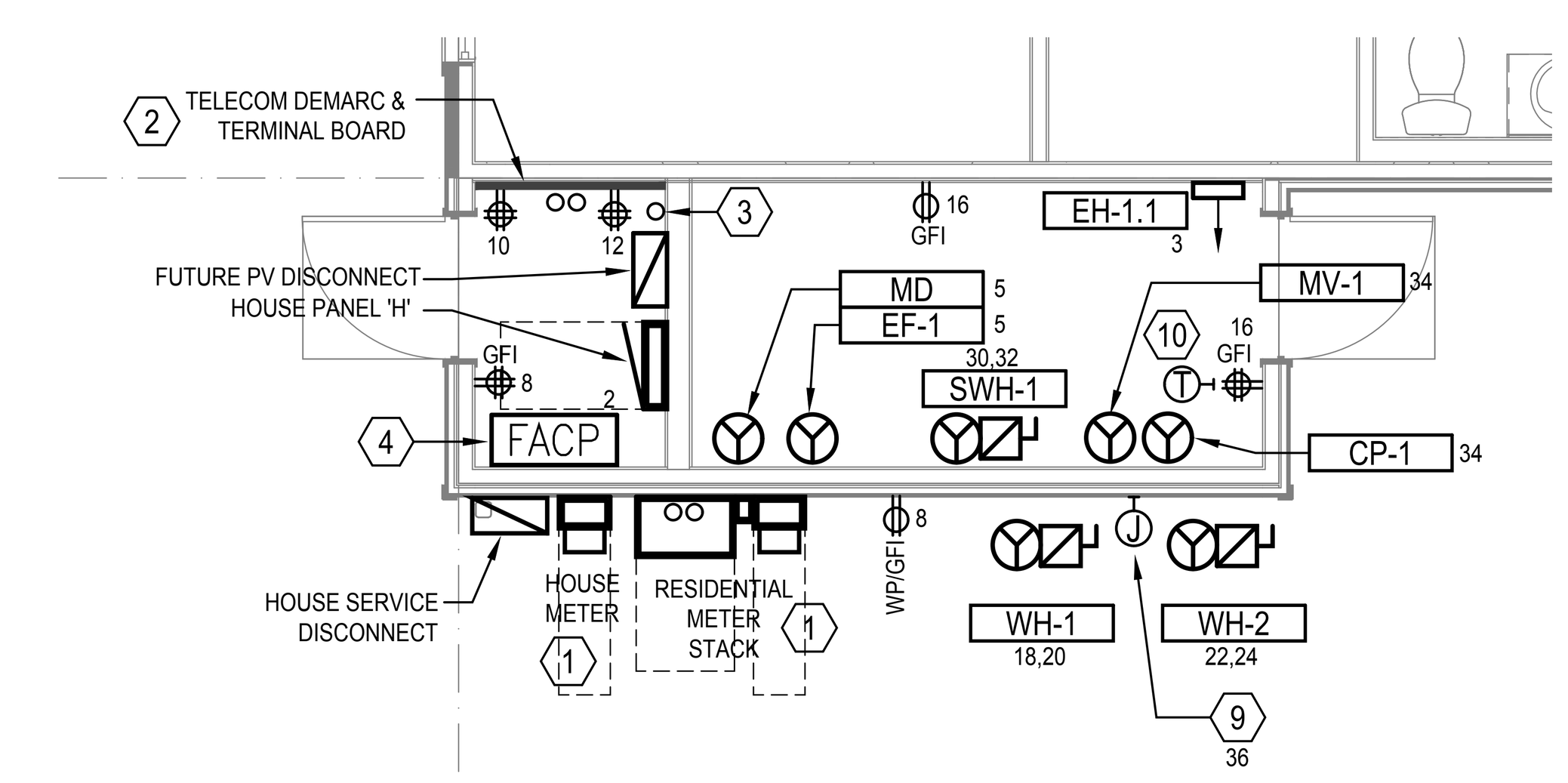
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.

10. ELECTRICAL CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



POWER AND LIGHTING PLAN - BUILDING 9 - LEVEL 1

SCALE: 3/16"=1'-0"



2 E-101 ELECTRICAL AND WATER ROOM

1/4"=1'-0"

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192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

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c/o: King County Housing Authority,
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13310 NE 133rd St.
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BUILDING 9

BID SET

GEORGINNA M. ... STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

REVISIONS / NOTES

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POWER AND LIGHTING PLAN - BUILDING 9 - LEVEL 1

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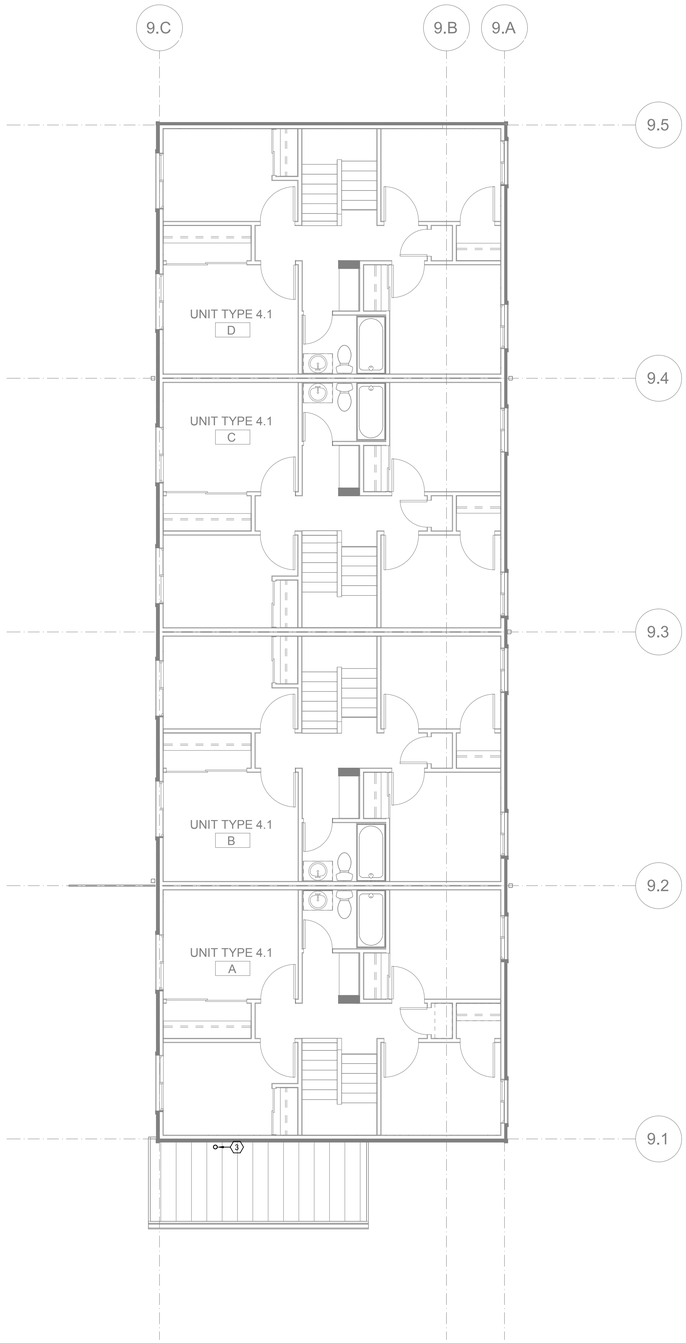

POWER AND LIGHTING PLAN - BUILDING 9 - LEVEL 2

SCALE: 3/16"=1'-0"

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

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BUILDING 9

BID SET

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POWER AND LIGHTING PLAN - BUILDING 9 - LEVEL 2

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GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

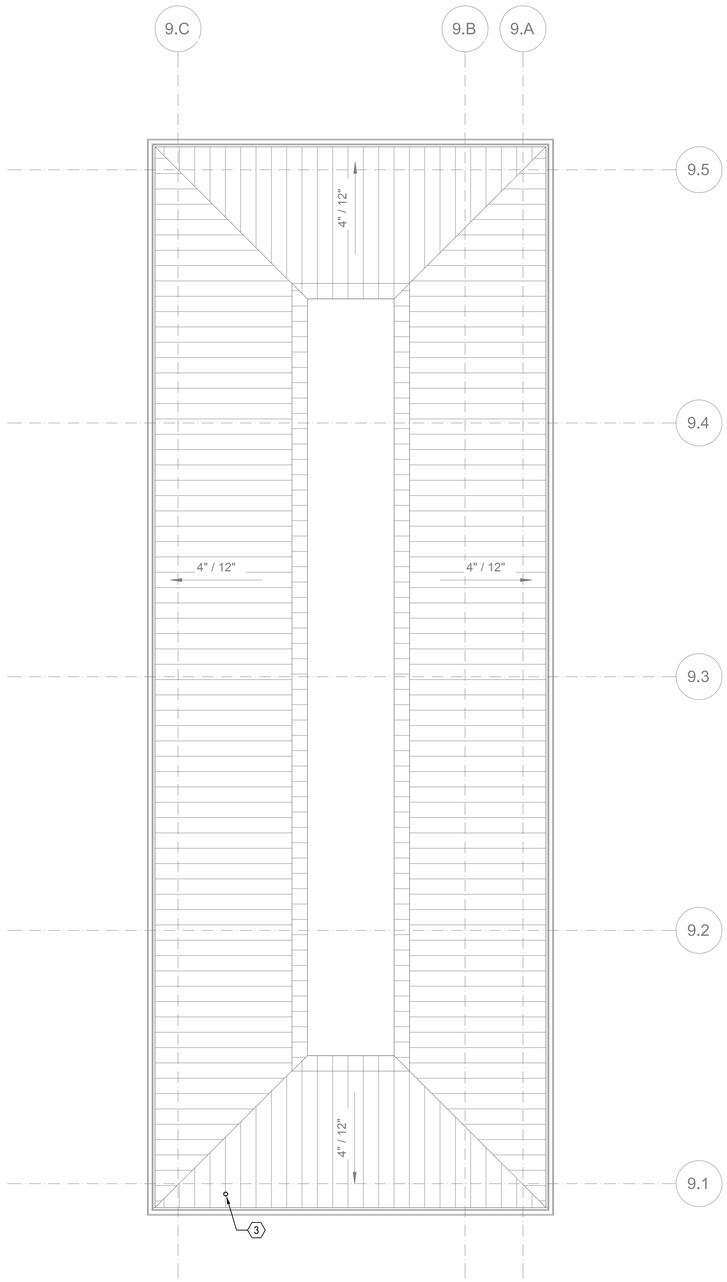
B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).



POWER PLAN - BUILDING 9 - ROOF

SCALE: 3/16"=1'-0"

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

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NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER PLAN - BUILDING 9 - ROOF

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016

SHEET NO.:

E9-103

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABLOY CONDUCTORS WITH XHHW-2 INSULATION);
CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

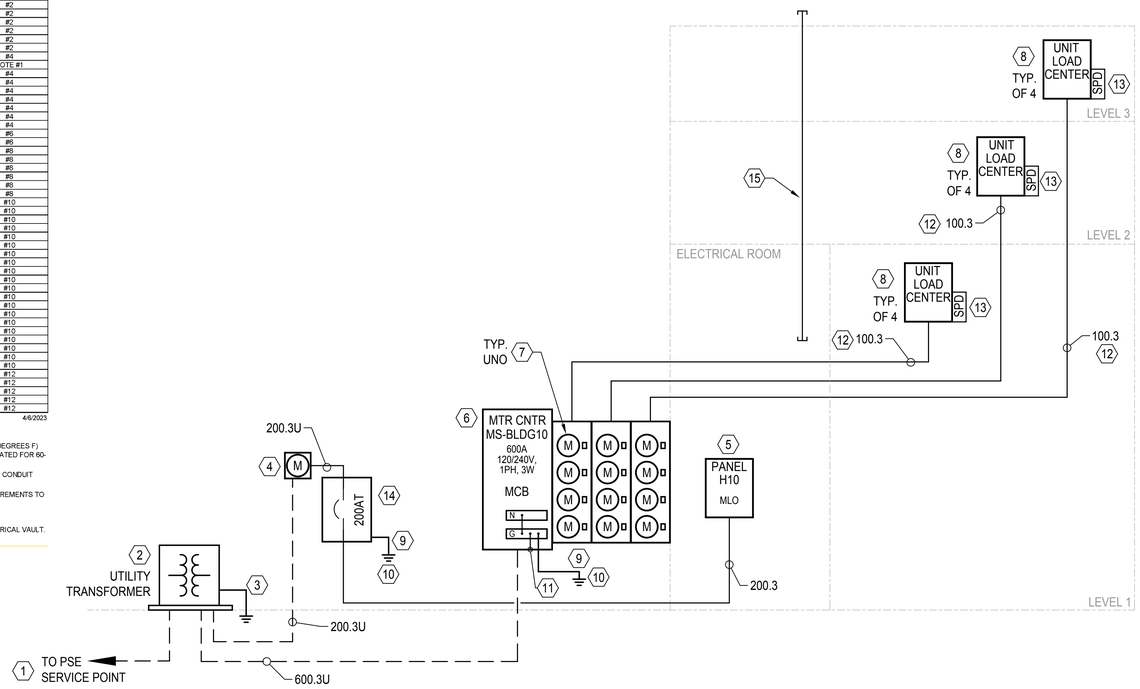
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE: NTS

FLAG NOTES (X):

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (12) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 10

UNIT TYPE: 2BR - 2.1 | **AREA (SF): 782** | 4/6/2023
DEMAND LOAD (kVA): 17.93 => 74.7 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA	x 3VA/SF	=	2.35	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	6.85	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:	100%		=	3.00	kVA
3,001VA - 120,000VA:	35%		=	1.35	kVA
> 120,000VA	25%		=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	**4.35**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:	75%				
		GENERAL APPLIANCE LOAD - DEMAND		=	**1.65 kVA**

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	**0.14 kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	3.91 kVA
	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA
		TOTAL DWELLING UNIT LOAD PER NEC 220, PART III		=	**23.54 kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]			=	23.48 kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%		=	10.00 kVA
> 10 kVA:	40%		=	5.39 kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS, 65% NAMEPLATE		=	2.54 kVA
		TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	**17.93 kVA**

UNIT TYPE: 3BR - 3.1 | **AREA (SF): 906** | 4/6/2023
DEMAND LOAD (kVA): 18.49 => 77.0 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA	x 3VA/SF	=	2.72	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	7.22	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:	100%		=	3.00	kVA
3,001VA - 120,000VA:	35%		=	1.48	kVA
> 120,000VA	25%		=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	**4.48**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:	75%				
		GENERAL APPLIANCE LOAD - DEMAND		=	**1.65 kVA**

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	**0.14 kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	4.53 kVA
	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA
		TOTAL DWELLING UNIT LOAD PER NEC 220, PART III		=	**24.29 kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]			=	23.86 kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%		=	10.00 kVA
> 10 kVA:	40%		=	5.54 kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS, 65% NAMEPLATE		=	2.94 kVA
		TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	**18.49 kVA**

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL | **MS - 12 unit STACK** | 4/6/2023
DEMAND LOAD (kVA): 137.09 => 571.2 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING APPLIANCES 1.5< X < 3.5kW QTY	1.5< X < 3.5kW LOAD (kVA)	3.5kW < X < 8.75kW QTY	3.5kW < X < 8.75kW LOAD (kVA)	8.75kW < X < 12kW QTY	8.75kW < X < 12kW LOAD (kVA)
2BR - 2.1	6	41.08	13.20	0.66	23.46	6	33.00	0	0.00	0	0.00	6	52.80
3BR - 3.1	6	43.31	13.20	0.66	27.18	6	33.00	0	0.00	0	0.00	6	52.80
0								0	0.00	0	0.00	0	0.00
TOTALS:	12	84.38	26.40	1.32	50.64	12	66.00	0	0.00	0	0.00	12	105.60
ADDITIONAL 25% OF LARGEST MOTOR:				0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD	=	334.37 kVA
DEMAND FACTOR FROM TABLE 220.84 =		41%
TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC	=	**137.09 kVA**

KIRKLAND HEIGHTS - 12 UNIT STACK FLAT (REHAB)
PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 12):	137.09 kVA
(SEE ATTACHED CALCS)	
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.	
RESIDENTIAL TOTAL:	137.09 kVA
	571.22 AMPS @ 120/240V, 1-PHASE
	PROVIDE 600A RESIDENTIAL METER CENTER

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):	
LIGHTING - Breezeway +Interior:	1.5 kVA
LIGHTING - SITE:	1.5 kVA
GENERAL RECEPTACLES:	4.0 kVA
MECHANICAL:	1.0 kVA
ELECT HEAT (WATER RMS):	1.0 kVA
CENTRAL HOT WATER (HPWH)	7.7 kVA
ELECT SWING TANK	4.5 kVA
HEAT TRACE	0.5 kVA
MISCELLANEOUS:	2.5 kVA
EV CHARGING (2):	16.6 kVA
HOUSE TOTAL:	40.83 kVA
	170.14 AMPS @ 120/240V, 1-PHASE
WITH 25% SPARE CAPACITY	51.04 kVA
	212.6708 AMPS @ 120/240V, 1-PHASE
	PROVIDE 200A HOUSE SERVICE
TOTAL BUILDING SERVICE:	188.13 kVA
	783.89 AMPS @ 120/240V, 1-PHASE

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 10

BID SET

JOHANNA M. [illegible] STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E10-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	CONDUCTORS PER SET PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.
B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H10
NORMAL POWER — VOLTAGE: 120 / 240 V — FED FROM: XFR — LOCATION: ELECTRICAL ROOM
A/C: SEE SINGLE LINE DIAGRAM — BUS RATING: 200 AMPS — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
M.O. OR MCB: M.O. 200 AMPS

CKT #	DESCRIPTION	CONN LOAD TYPE	CONN LOAD kVA	CKT TAG	CB AMPS/#P	PH	CB AMPS/#P	CKT TAG	CONN LOAD TYPE	CONN LOAD kVA	DESCRIPTION	CKT #
1	LTG - BREEZEWAY	R	0.27	20-1	20 / 1	A	20 / 1	20-1	N	0.160	FIRE ALARM CONTROL PANEL	1
3	SPARE		0.00		20 / 1	B	20 / 1	20-1	N	0.24	LTG TIME CLOCK	4
5	RECEPT - LVL 1 BREEZEWAY	R	0.36	20-1	20 / 1	A	20 / 1			0.00	SPARE	6
7	RECEPT - LVL 2 BREEZEWAY	R	0.36	20-1	20 / 1	B	20 / 1	20-1	R	0.54	RECEPTS - ELEC RM	8
9	RECEPT - LVL 3 BREEZEWAY	R	0.36	20-1	20 / 1	A	20 / 1	20-1	R	0.72	RECEPTS - TELECOM	10
11	LTG - ELEC / MECH CLOSETS	L	0.24	20-1	20 / 1	B	20 / 1	20-1	R	0.36	RECEPTS - TELECOM	12
13	ELECT HEATER - FIRE SPRINKLER	C	1.50	20-1	20 / 1	A	20 / 1			0.00	SPARE	14
15	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.24	20-1	20 / 1	B	20 / 1	20-1	R	0.72	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-1	18
19	SPARE		0.00		20 / 1	B						20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20-1	20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-2	22
23	SPARE		0.00		20 / 1	B						24
25	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-3	26
27	SPARE		0.00		20 / 1	B						28
29	SPACE ONLY					A	30 / 2	30.2N	C	4.50	WASHING TANK - SWH-1	30
31	SPACE ONLY					B						32
33	SPACE ONLY					A	20 / 1	20-1	N	0.36	CIRC PUMP "CP-1" & MIX VALVE "MV-1"	34
35	SPACE ONLY					B	20 / 1	20-1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

		CONNECTED LOAD		DEMAND FACTOR	DEMAND LOAD	
L	= LIGHTING	0.51	kVA	125%	0.64	kVA
R	= RECEPTACLES	4.14	kVA	NEC 220-44	4.14	kVA
M	= MOTORS	0.24	kVA	100%	0.24	kVA
	PLUS 25% OF LARGEST MOTOR	0.24	kVA	25%	0.06	kVA
C	= CONTINUOUS	11.18	kVA	125%	13.98	kVA
N	= NON-CONTINUOUS	1.44	kVA	100%	1.44	kVA
K	= KITCHEN	0.00	kVA	75%	0.00	kVA

PANEL CONNECTED TOTAL:
17.51 kVA
72.98 AMPS

PANEL DEMAND TOTAL:
20.50 kVA
85.41 AMPS

NOTES:
A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER

LOAD CENTER - 2 BEDROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
M.O. OR MCB: MLO 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/#P	PH	CB AMPS/#P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20-1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN LTG, RECEPTS, SD (1)	20-1	20 / 1	B			-	4
5	RECEPTS, ERV, MEDIA PNL (1)	20-1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20-1	20 / 1	B			-	8
9	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	A	20 / 3	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	B			-	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20-1	20 / 1	B			-	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

LOAD CENTER - 3 BEDROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
M.O. OR MCB: MLO 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/#P	PH	CB AMPS/#P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20-1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN LTG, RECEPTS, SD (1)	20-1	20 / 1	B			-	4
5	RECEPTS, ERV, MEDIA PNL (1)	20-1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20-1	20 / 1	B			-	8
9	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	A	20 / 3	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	B			-	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20-1	20 / 1	B			-	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-3	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-1	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.163					2
			/						
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS; CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES. DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	240 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3

NOTES:
1. CONFIRM EXACT LOCATION WITH ARCHITECT.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 12 UNIT STACKED FLATS

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES BED 1	BED 2	BED 3	LIVING
A	2-BDRM	CH-0.84	CH-0.7		CH-1.8
B	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
C	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
D	2-BDRM	CH-0.84	CH-0.7		CH-1.8
E	2-BDRM	CH-0.56	CH-0.56		CH-0.93
F	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
G	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
H	2-BDRM	CH-0.56	CH-0.56		CH-0.93
I	2-BDRM	CH-0.7	CH-0.56		CH-1.12
J	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
K	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
L	2-BDRM	CH-0.7	CH-0.56		CH-1.12

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.

B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 10

BID SET

REGISTERED PROFESSIONAL ENGINEER — VIRGINNA M. [illegible] — STATE OF WASHINGTON — 43761 — NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

SCHEDULES

PERMIT #
DRAWN RA, JF
CHECKED GL
ISSUE DATE 4/14/2023
JOB NO. 22016
SHEET NO.:

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/630 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE
& SPECS FOR ALL 'S' LIGHTING FIXTURES.

10/7/2021 7:33:34 AM

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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SMR Architects
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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 10

BID SET

GEORGINNA M. JACKSON
STATE OF WASHINGTON
43761
REGISTERED
PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

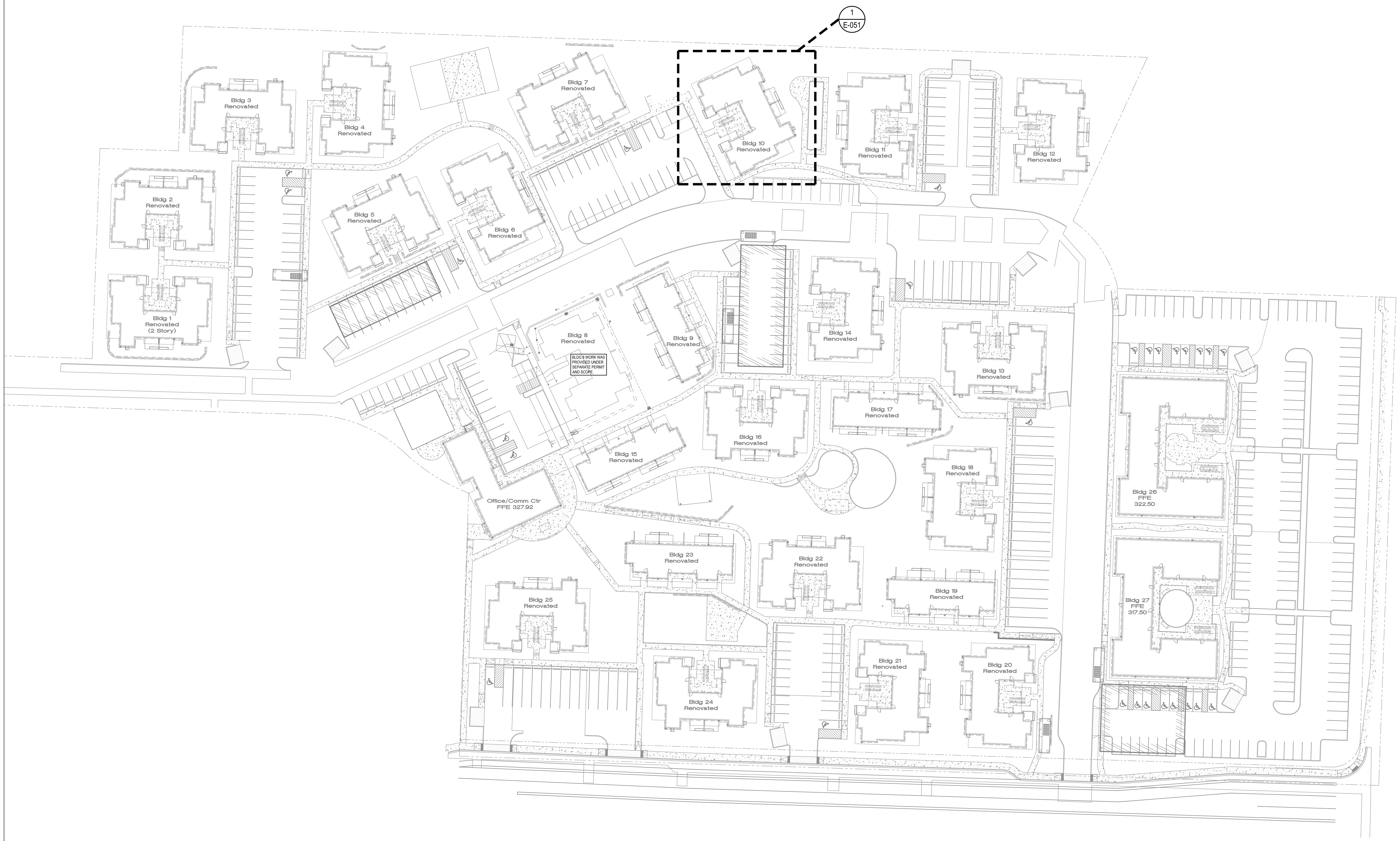
TITLE

LUMINAIRE SCHEDULE

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016

SHEET NO.:

E10-005



OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

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SHEET NO.:	

E10-050

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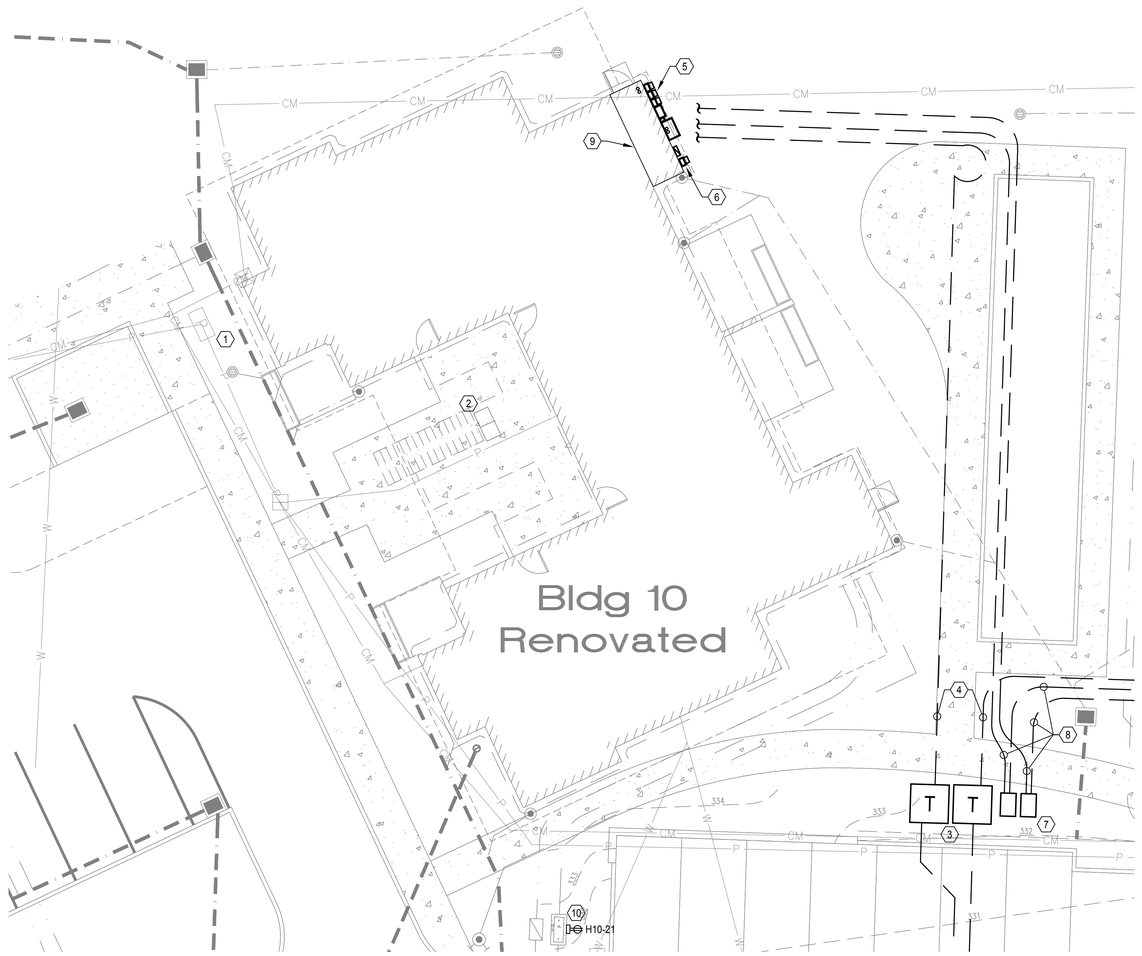

ELECTRICAL SITE PLAN - BUILDING 10
SCALE: 1/8" = 1'-0"

FLAG NOTES (X):

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

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ELECTRICAL SITE PLAN - BUILDING 10

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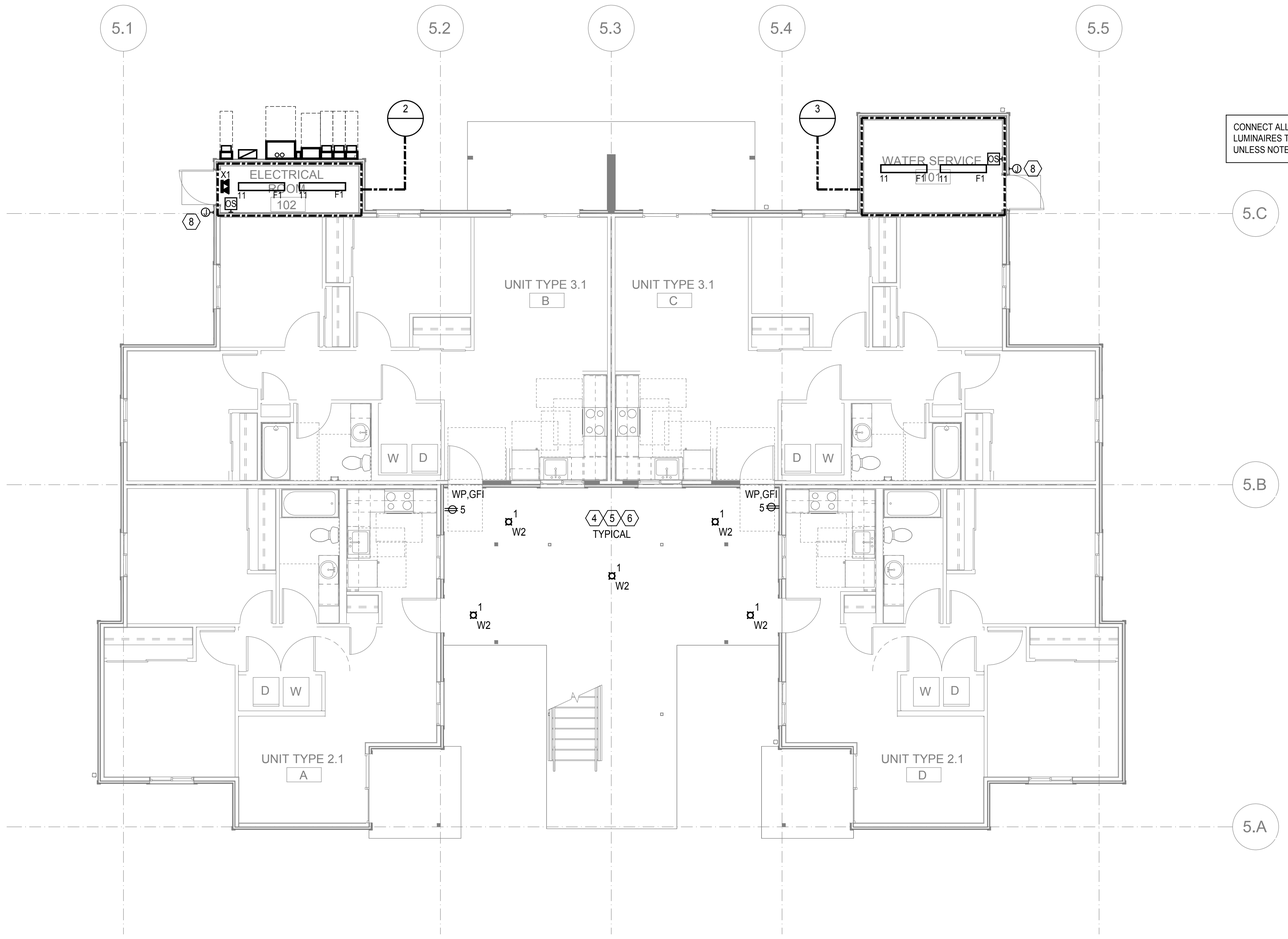
E10-051

10/7/2021 7:33:34 AM



CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H10 UNLESS NOTED OTHERWISE.

POWER AND LIGHTING PLAN - BUILDING 10 - LEVEL 1

SCALE: 3/16"=1'-0"

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

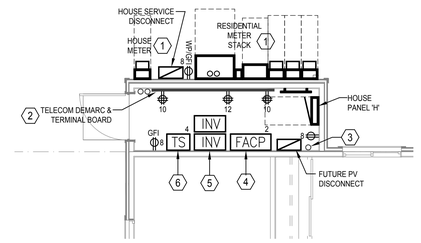
B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

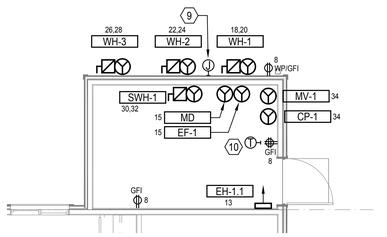
D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.
2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER. SEE ENLARGED UNIT PLANS FOR LOCATIONS.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS.
   BASIS OF DESIGN: SURE-LITES # INV-375-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.
7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.
8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.
10. CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



2 E-101 ELECTRICAL ROOM
1/4"=1'-0"



3 E-101 WATER ROOM
1/4"=1'-0"

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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
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BUILDING 10

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

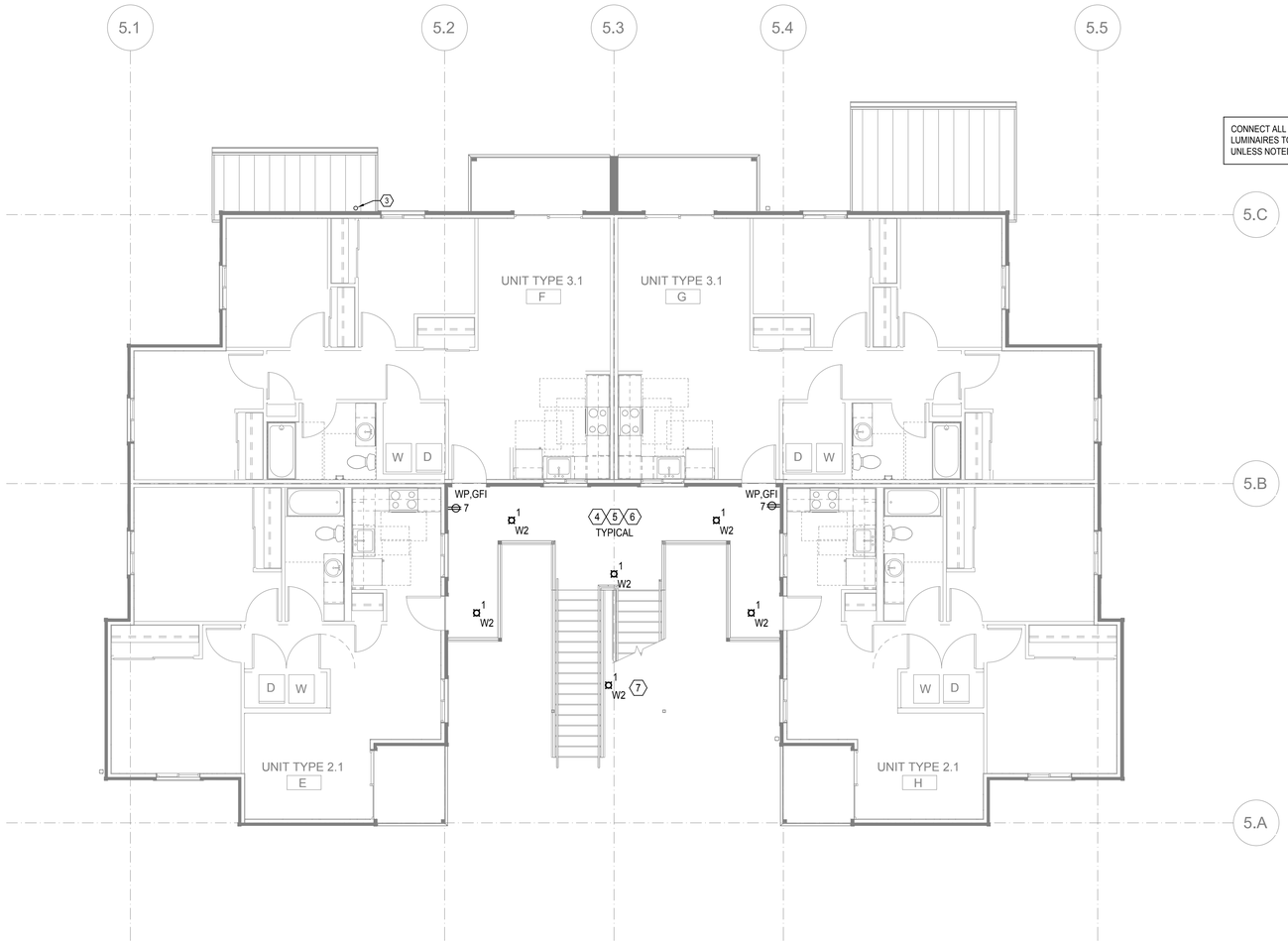
TITLE

POWER AND LIGHTING PLAN - BUILDING 10 - LEVEL 1

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E10-101

10/7/2021 7:33:34 AM



ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H10 UNLESS NOTED OTHERWISE.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

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FLAG NOTES (X):

1. NOT USED
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
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7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.

POWER AND LIGHTING PLAN - BUILDING 10 - LEVEL 2

SCALE: 3/16"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
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BUILDING 10

BID SET

NOT FOR CONSTRUCTION

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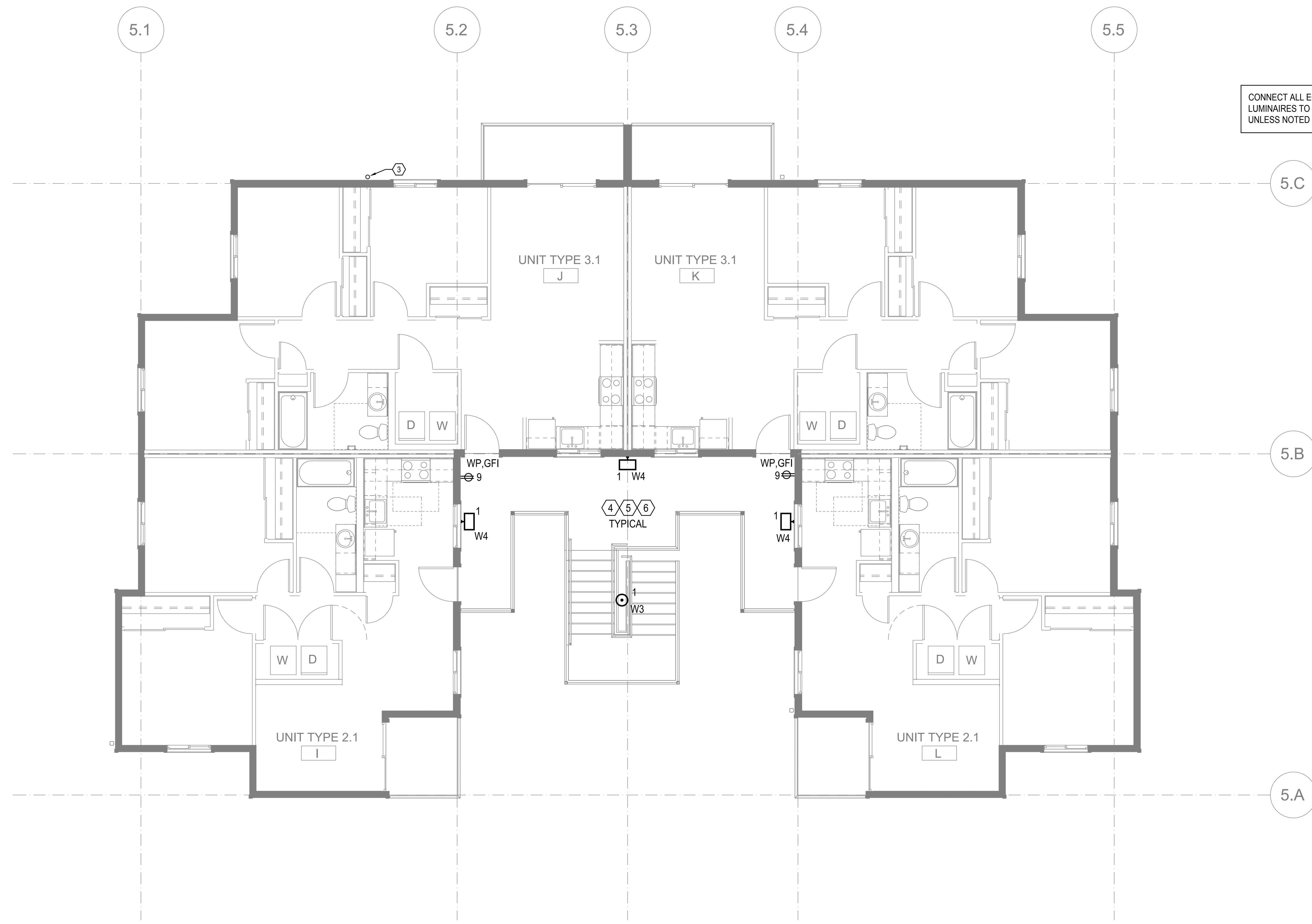
POWER AND LIGHTING PLAN - BUILDING 10 - LEVEL 2

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E10-102

10/7/2021 7:33:34 AM



CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H10 UNLESS NOTED OTHERWISE.

POWER AND LIGHTING PLAN - BUILDING 10 - LEVEL 3

SCALE: 3/16"=1'-0"

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BUILDING 10

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GEORGINNA M. ... STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

REVISIONS / NOTES

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POWER AND LIGHTING PLAN - BUILDING 10 - LEVEL 3

PERMIT #	
DRAWN	RA, JF
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ISSUE DATE	4/14/2023
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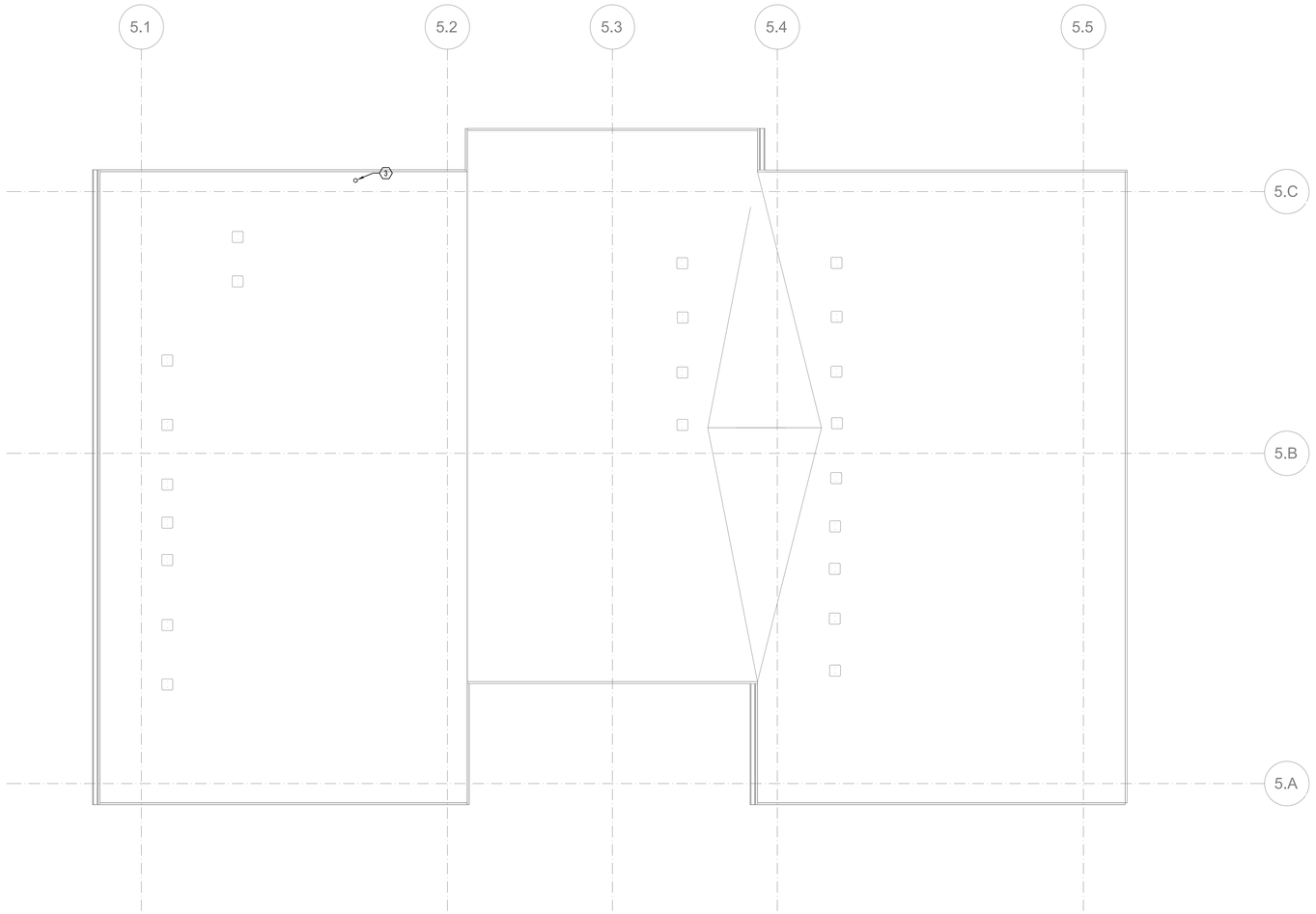
SHEET NO.:	

E10-103

10/7/2021 7:33:34 AM



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POWER PLAN - BUILDING 10 - ROOF

SCALE: 3/16"=1'-0"

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E10-104

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

4/6/2023

GENERAL SCHEDULE NOTES:

A. AL= ALUMINUM (STABLOY CONDUCTORS WITH XHHW-2 INSULATION);
CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

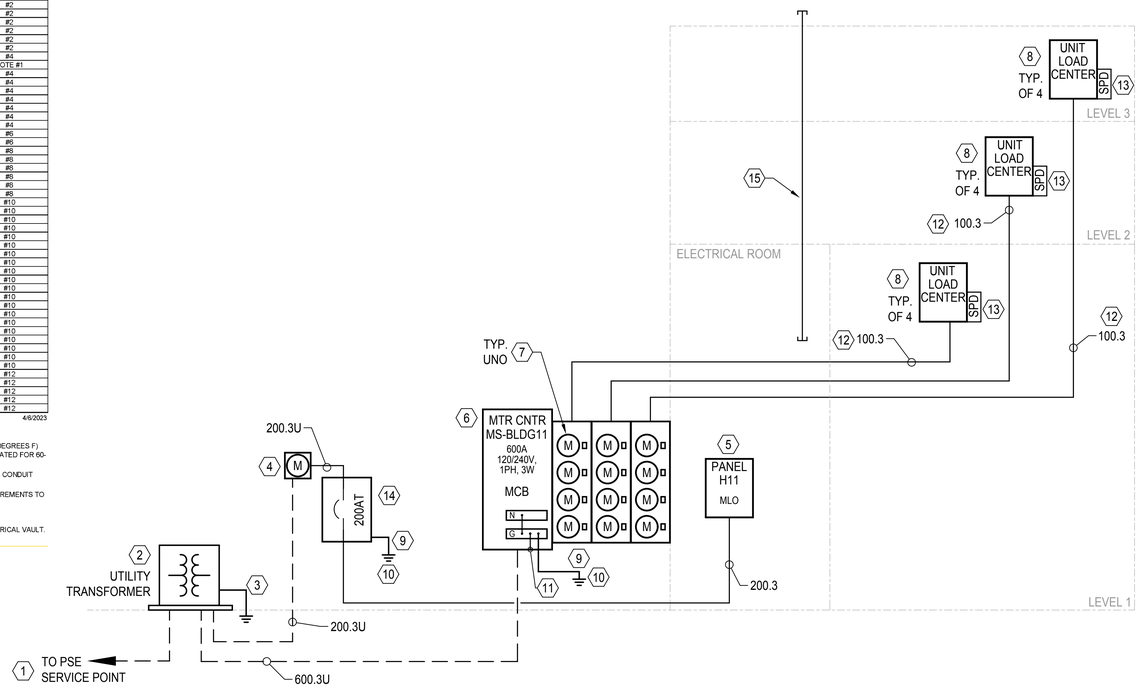
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE: NTS

FLAG NOTES (X):

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (12) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 11

UNIT TYPE: 2BR - 2.1 | **AREA (SF): 782** | 4/6/2023
DEMAND LOAD (kVA): 17.93 => 74.7 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	2.35	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	6.85	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:	100%		=	3.00	kVA
3,001VA - 120,000VA:	35%		=	1.35	kVA
> 120,000VA	25%		=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	**4.35**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:	75%				
		GENERAL APPLIANCE LOAD - DEMAND		=	**1.65 kVA**

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	**0.14 kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51] = 3.91 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA
		TOTAL DWELLING UNIT LOAD PER NEC 220, PART III		=	**23.54 kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.48	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	5.39	kVA

ELECTRIC HEAT AND AC [220.82(C)]:

LARGEST LOAD OF OPTIONS: < 4 ELECT SPACE HEATERS, 65% NAMEPLATE = 2.54 kVA

TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	**17.93**	**kVA**

UNIT TYPE: 3BR - 3.1 | **AREA (SF): 906** | 4/6/2023
DEMAND LOAD (kVA): 18.49 => 77.0 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	2.72	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	7.22	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:	100%		=	3.00	kVA
3,001VA - 120,000VA:	35%		=	1.48	kVA
> 120,000VA	25%		=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	**4.48**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:	75%				
		GENERAL APPLIANCE LOAD - DEMAND		=	**1.65 kVA**

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	**0.14 kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51] = 4.53 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA
		TOTAL DWELLING UNIT LOAD PER NEC 220, PART III		=	**24.29 kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.86	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	5.54	kVA

ELECTRIC HEAT AND AC [220.82(C)]:

LARGEST LOAD OF OPTIONS: < 4 ELECT SPACE HEATERS, 65% NAMEPLATE = 2.94 kVA

TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	**18.49**	**kVA**

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL | **MS - 12 unit STACK** | 4/6/2023
DEMAND LOAD (kVA): 137.09 => 571.2 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING APPLIANCES 1.5< X < 3.5kW QTY	1.5< X < 3.5kW LOAD (kVA)	3.5kW < X < 8.75kW QTY	3.5kW < X < 8.75kW LOAD (kVA)	8.75kW < X < 12kW QTY	8.75kW < X < 12kW LOAD (kVA)
2BR - 2.1	6	41.08	13.20	0.66	23.46	6	33.00	0	0.00	0	0.00	6	52.80
3BR - 3.1	6	43.31	13.20	0.66	27.18	6	33.00	0	0.00	0	0.00	6	52.80
0								0	0.00	0	0.00	0	0.00
TOTALS:	12	84.38	26.40	1.32	50.64	12	66.00	0	0.00	0	0.00	12	105.60
ADDITIONAL 25% OF LARGEST MOTOR:				0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD = 334.37 kVA
DEMAND FACTOR FROM TABLE 220.84 = 41%

TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC	=	**137.09**	**kVA**

KIRKLAND HEIGHTS - 12 UNIT STACK FLAT (REHAB)
PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 12):	137.09 kVA	
(SEE ATTACHED CALCS)		
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.		
RESIDENTIAL TOTAL:	137.09 kVA	
	571.22 AMPS @ 120/240V, 1-PHASE	
	PROVIDE 600A RESIDENTIAL METER CENTER	

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):		
LIGHTING - Breezeway +Interior:	1.5 kVA	
LIGHTING - SITE:	1.5 kVA	
GENERAL RECEPTACLES:	4.0 kVA	
MECHANICAL:	1.0 kVA	
ELECT HEAT (WATER RMS):	1.0 kVA	
CENTRAL HOT WATER (HPWH)	7.7 kVA	
ELECT SWING TANK	4.5 kVA	
HEAT TRACE	0.5 kVA	
MISCELLANEOUS:	2.5 kVA	
EV CHARGING (2):	16.6 kVA	
HOUSE TOTAL:	40.83 kVA	
	170.14 AMPS @ 120/240V, 1-PHASE	
WITH 25% SPARE CAPACITY	51.04 kVA	
	212.6708 AMPS @ 120/240V, 1-PHASE	
	PROVIDE 200A HOUSE SERVICE	
TOTAL BUILDING SERVICE:	188.13 kVA	
	783.89 AMPS @ 120/240V, 1-PHASE	

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 11

BID SET

JOHANNA M. [illegible] STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E11-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	CONDUCTORS PER SET PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#6
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#12
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.
B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H11 — FED FROM: XFR — LOCATION: ELECTRICAL ROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE 3-WIRE — SURFACE-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 200 AMPS — M.L.O OR MCB: MLO — 200 AMPS

CKT #	DESCRIPTION	CONN LOAD TYPE	kVA	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	CONN LOAD TYPE	kVA	DESCRIPTION	CKT #
1	LTG - BREEZEWAY	R	0.27	20-1	20 / 1	A	20 / 1	20-1	N	0.60	FIRE ALARM CONTROL PANEL	2
3	SPARE		0.00		20 / 1	B	20 / 1	20-1	N	0.24	LTG-TIME CLOCK	4
5	RECEPT - LVL 1 BREEZEWAY	R	0.36	20-1	20 / 1	A	20 / 1			0.00	SPARE	6
7	RECEPT - LVL 2 BREEZEWAY	R	0.36	20-1	20 / 1	B	20 / 1	20-1	R	0.54	RECEPTS - ELECT RM	8
9	RECEPT - LVL 3 BREEZEWAY	R	0.36	20-1	20 / 1	A	20 / 1	20-1	R	0.72	RECEPTS - TELECOM	10
11	LTG - ELECT / MECH CLOSETS	R	0.24	20-1	20 / 1	B	20 / 1	20-1	R	0.36	RECEPTS - TELECOM	12
13	ELECT HEATER - FIRE SPRINKLER	C	1.50	20-1	20 / 1	A	20 / 1			0.00	SPARE	14
15	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.24	20-1	20 / 1	B	20 / 1	20-1	R	0.72	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-1*	18
19	SPARE		0.00		20 / 1	B					-	20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20-1	20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-2*	22
23	SPARE		0.00		20 / 1	B					-	24
25	LTG - SITE	L	0.34	20-1	20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-3*	26
27	SPARE		0.00		20 / 1	B					-	28
29	SPACE ONLY					A	30 / 2	30.2N	C	4.50	WH SWING TANK - SWH-1*	30
31	SPACE ONLY					B						32
33	SPACE ONLY					A	20 / 1	20-1	N	0.36	CIRC PUMP CP-1* & MIX VALVE MAV-1*	34
35	SPACE ONLY					B	20 / 1	20-1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

		CONNECTED LOAD	DEMAND FACTOR	DEMAND LOAD	
L	= LIGHTING	0.85	kVA 125%	1.06	kVA
R	= RECEPTACLES	4.14	kVA NEC 220.44	4.14	kVA
M	= MOTORS	0.24	kVA 100%	0.24	kVA
	PLUS 25% OF LARGEST MOTOR	0.24	kVA 25%	0.06	kVA
C	= CONTINUOUS	11.18	kVA 125%	13.98	kVA
N	= NON-CONTINUOUS	1.44	kVA 100%	1.44	kVA
K	= KITCHEN	0.00	kVA 75%	0.00	kVA

PANEL CONNECTED TOTAL: 17.85 kVA / 74.39 AMPS
PANEL DEMAND TOTAL: 20.92 kVA / 87.18 AMPS

NOTES:
A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (#):
1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER.

LOAD CENTER - 2 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O OR MCB: MLO — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20-1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN LTG, RECEPTS, SD (1)	20-1	20 / 1	B			-	4
5	RECEPTS, ERV, MEDIA PNL (1)	20-1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20-1	20 / 1	B			-	8
9	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	A	20 / 3	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	B			-	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	30 / 2	30.2	DRYER (1)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20-1	20 / 1	B			-	16
17	DED RECEPT - AC UNIT (BY TENANT)	20-1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

LOAD CENTER - 3 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O OR MCB: MLO — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20-1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN LTG, RECEPTS, SD (1)	20-1	20 / 1	B			-	4
5	RECEPTS, ERV, MEDIA PNL (1)	20-1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20-1	20 / 1	B			-	8
9	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	A	20 / 3	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	B			-	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20-1	20 / 1	B			-	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-3	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-1	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.163					2
			/						
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/9/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS; CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES. DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	240 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3

NOTES:
1. CONFIRM EXACT LOCATION WITH ARCHITECT.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 12 UNIT STACKED FLATS

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES BED 1	BED 2	BED 3	LIVING
A	2-BDRM	CH-0.84	CH-0.7		CH-1.8
B	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
C	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
D	2-BDRM	CH-0.84	CH-0.7		CH-1.8
E	2-BDRM	CH-0.56	CH-0.56		CH-0.93
F	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
G	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
H	2-BDRM	CH-0.56	CH-0.56		CH-0.93
I	2-BDRM	CH-0.7	CH-0.56		CH-1.12
J	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
K	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
L	2-BDRM	CH-0.7	CH-0.56		CH-1.12

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.

B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 11

BID SET

VIRGINNA M. BROOKS — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

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SCHEDULES

PERMIT #
DRAWN RA, JF
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JOB NO. 22016
SHEET NO.:

E11-004

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/630 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE
& SPECS FOR ALL 'S' LIGHTING FIXTURES.

10/7/2021 7:33:34 AM

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 11

BID SET

GEORGINNA M. [illegible]
STATE OF WASHINGTON
43761
REGISTERED
PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES
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LUMINAIRE SCHEDULE

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DRAWN	RA, JF
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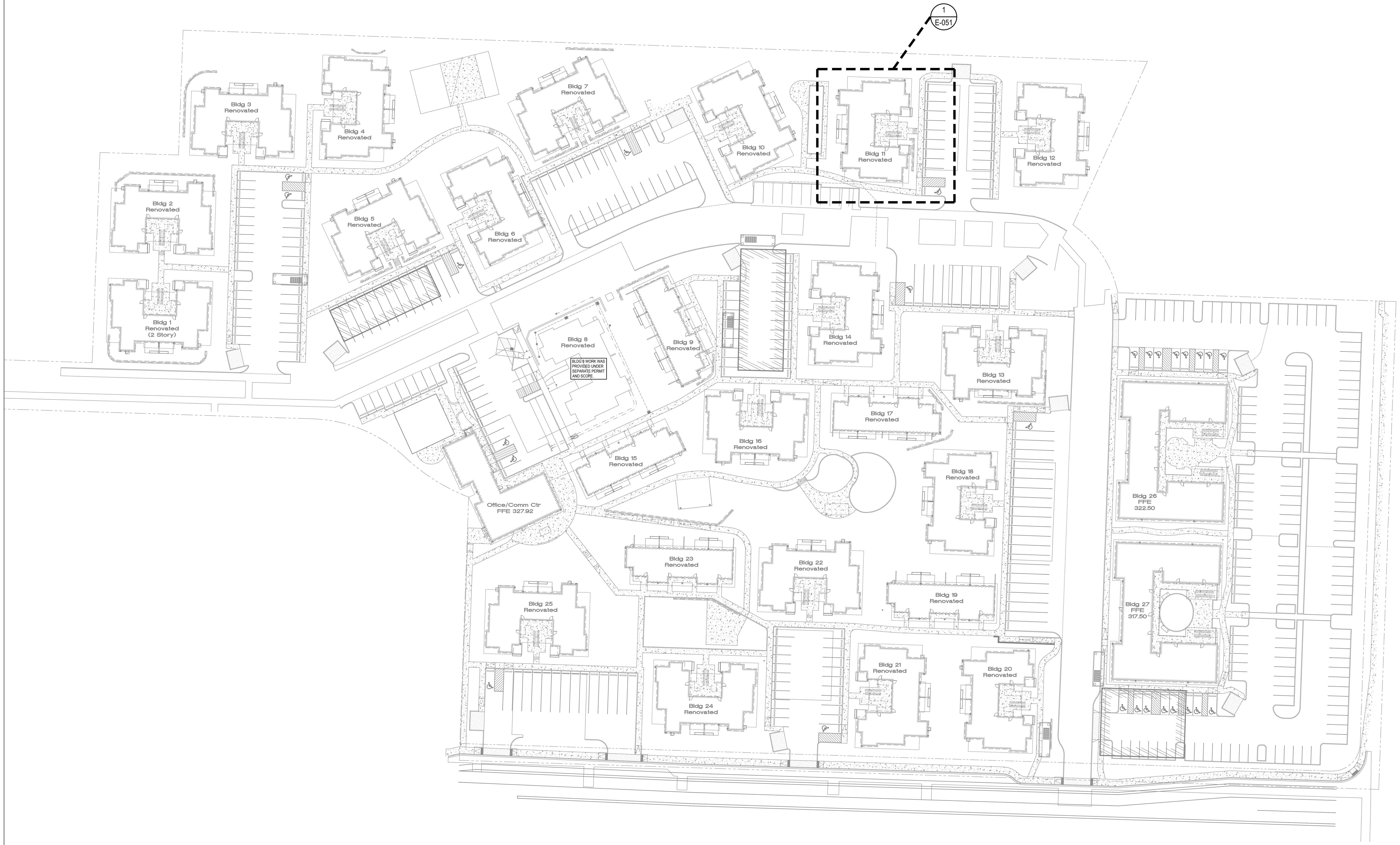
SHEET NO.:

E11-005



OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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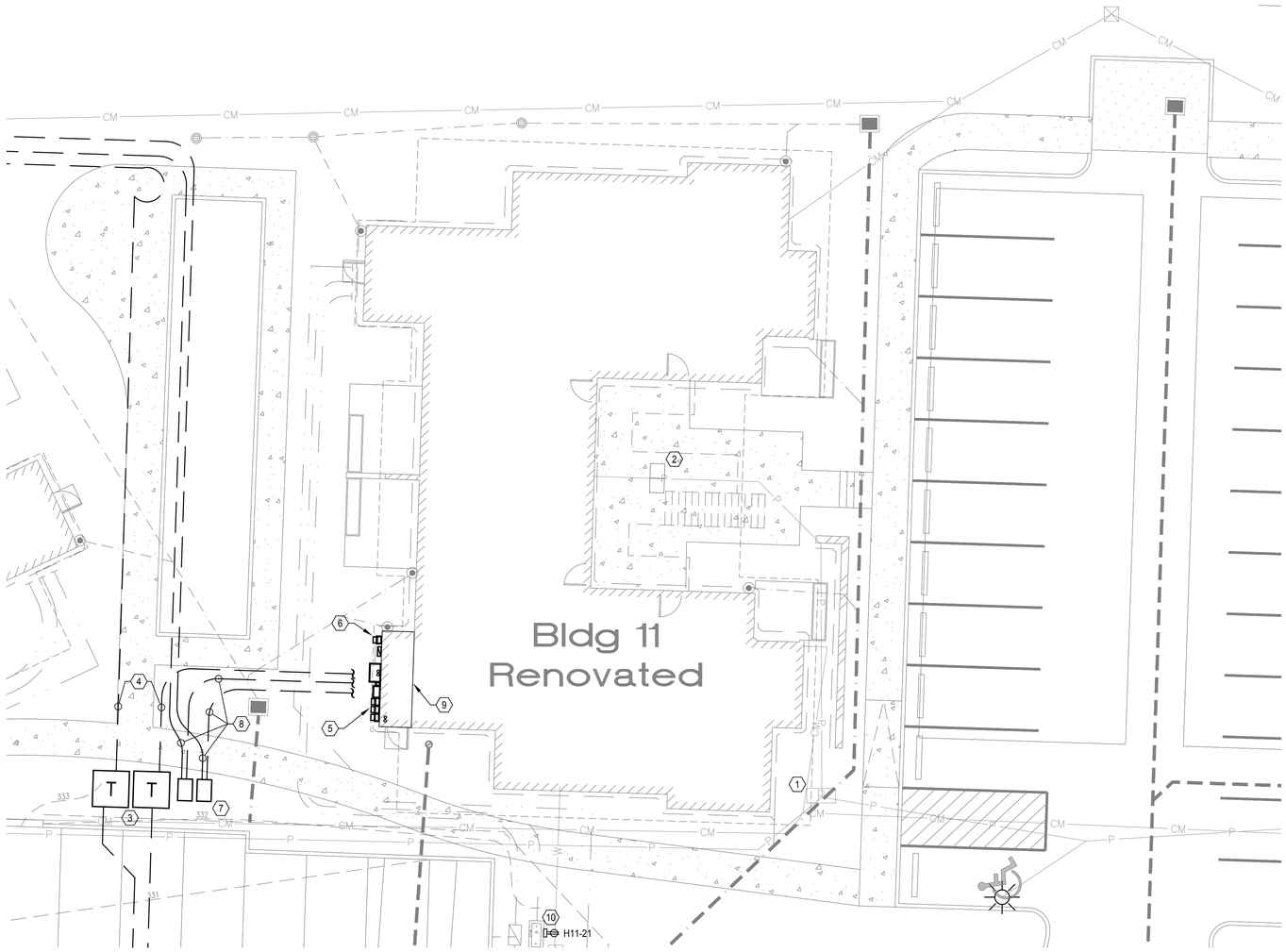
SHEET NO.:	

E11-050

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.



ELECTRICAL SITE PLAN - BUILDING 11
SCALE: 1/8" = 1'-0"

FLAG NOTES (X):

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 11

BID SET

GEORGINNA M. LAMSON
STATE OF WASHINGTON
43761
REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

ELECTRICAL SITE PLAN - BUILDING 11

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

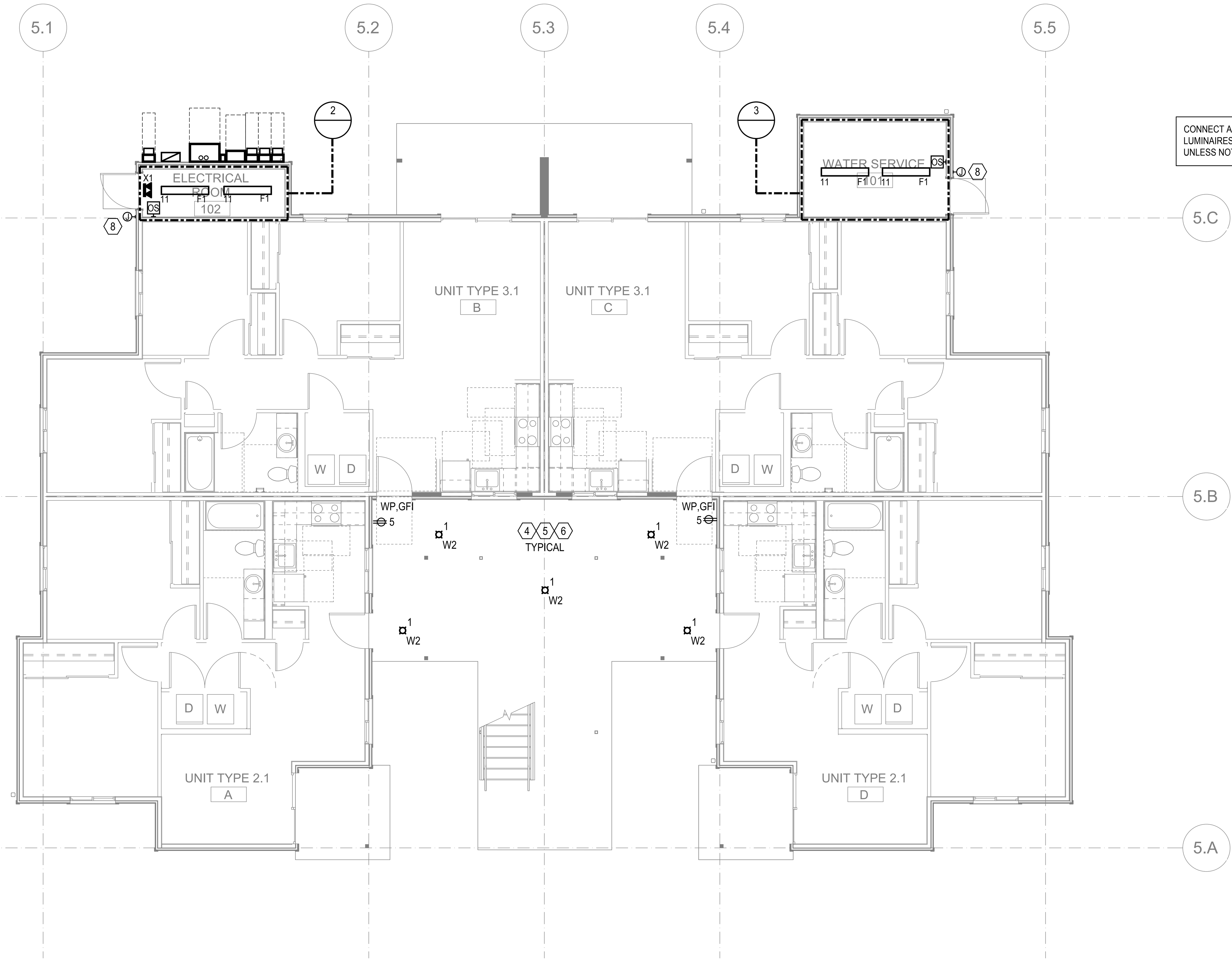
E11-051

10/7/2021 7:33:34 AM

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H11 UNLESS NOTED OTHERWISE.



POWER AND LIGHTING PLAN - BUILDING 11 - LEVEL 1

SCALE: 3/16"=1'-0"

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.

2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.

3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.

5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS.
   BASIS OF DESIGN: SURE-LITES # INV-375-SD

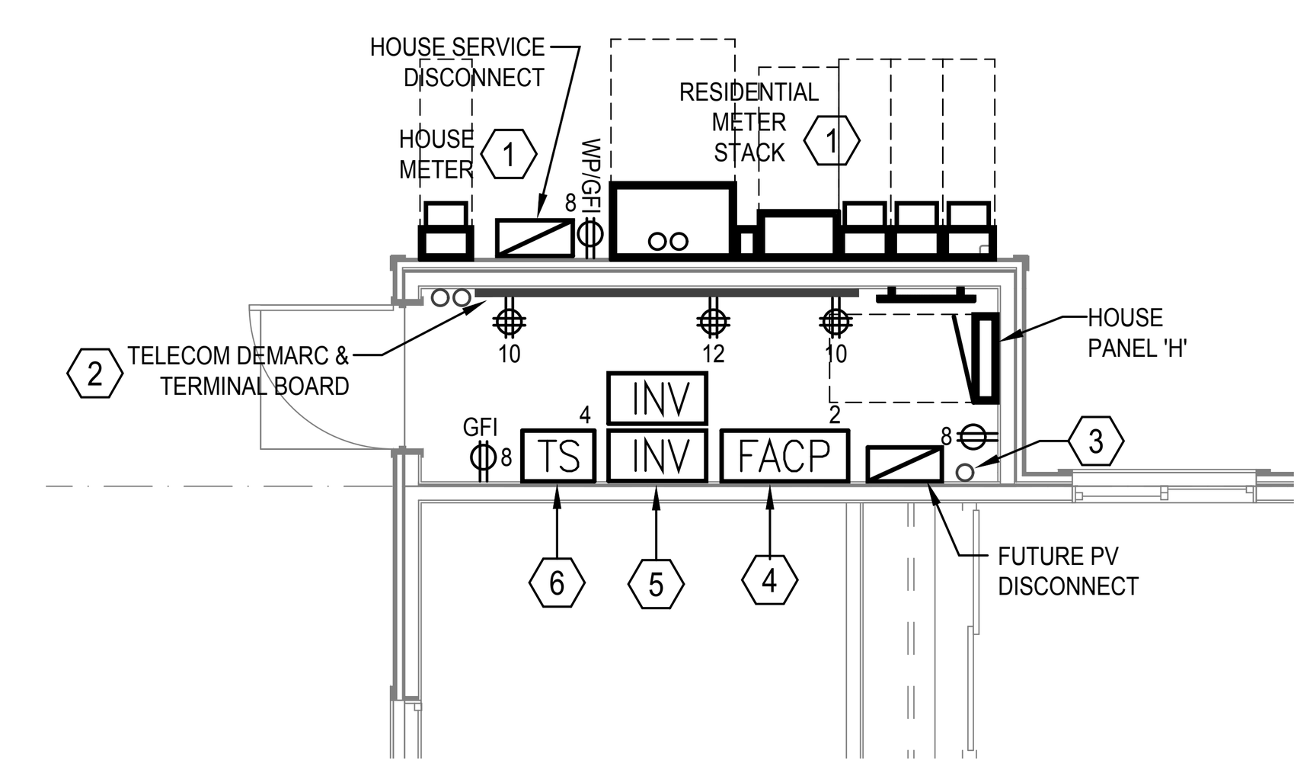
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.

7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.

8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.

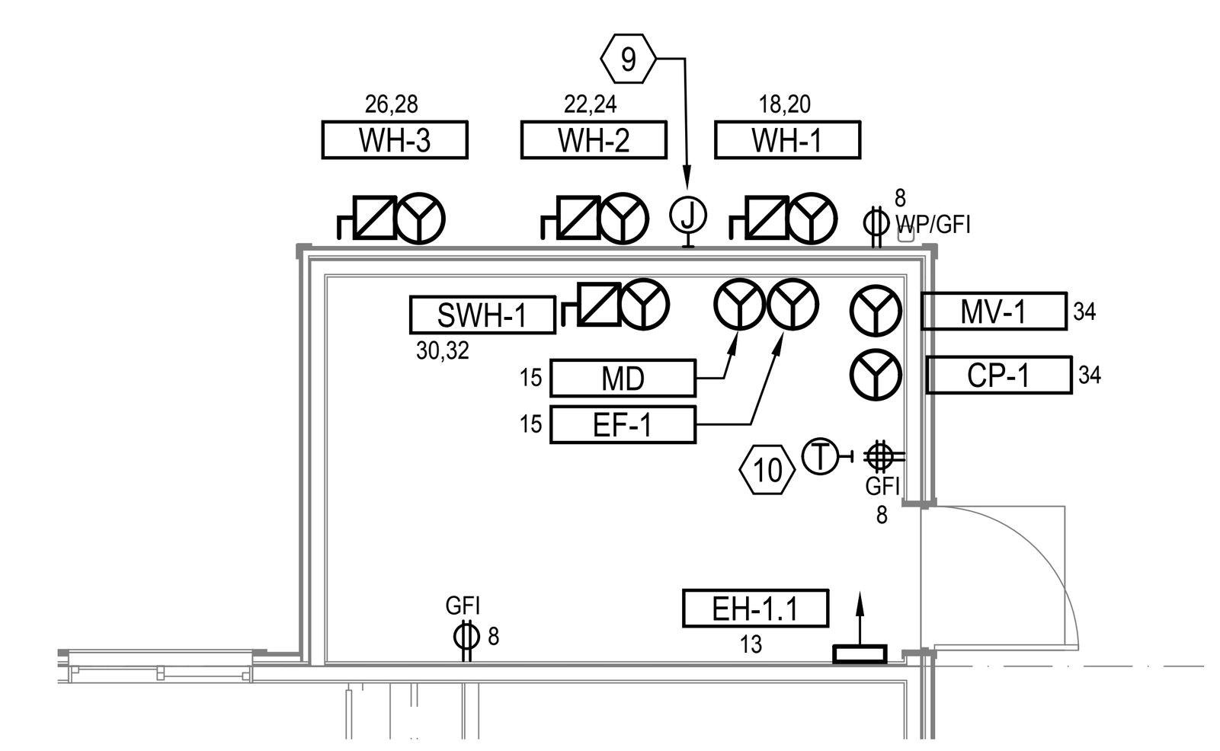
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.

10. CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



2 E-101 **ELECTRICAL ROOM**

1/4"=1'-0"



3 E-101 **WATER ROOM**

1/4"=1'-0"

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
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Seattle, Washington 98109
Phone: 206.285.2966

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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 11

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

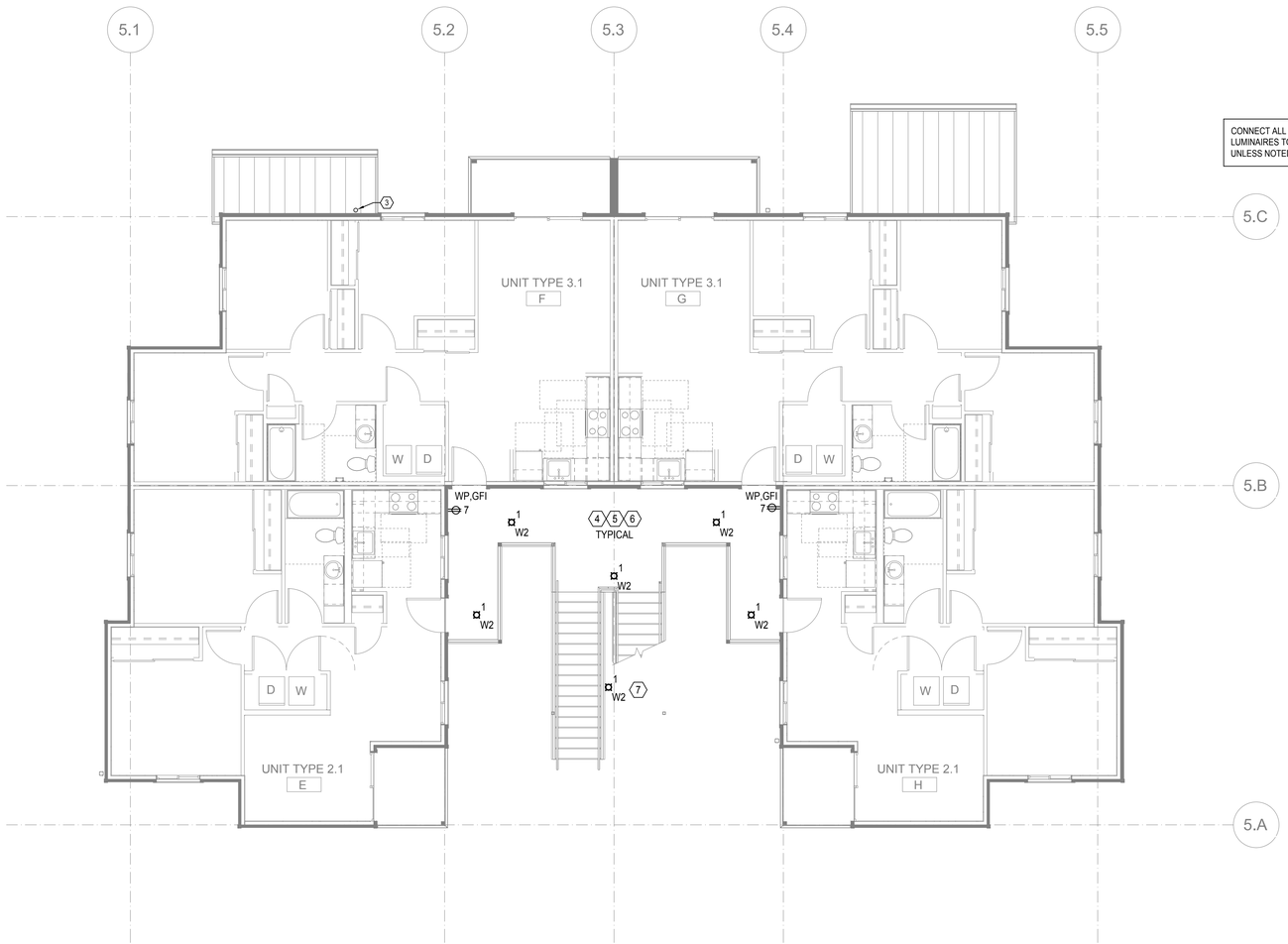
TITLE

POWER AND LIGHTING PLAN - BUILDING 11 - LEVEL 1

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E11-101

10/7/2021 7:33:34 AM



CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H11 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-375-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.
7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.

POWER AND LIGHTING PLAN - BUILDING 11 - LEVEL 2

SCALE: 3/16"=1'-0"

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
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BUILDING 11

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

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POWER AND LIGHTING PLAN - BUILDING 11 - LEVEL 2

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E11-102

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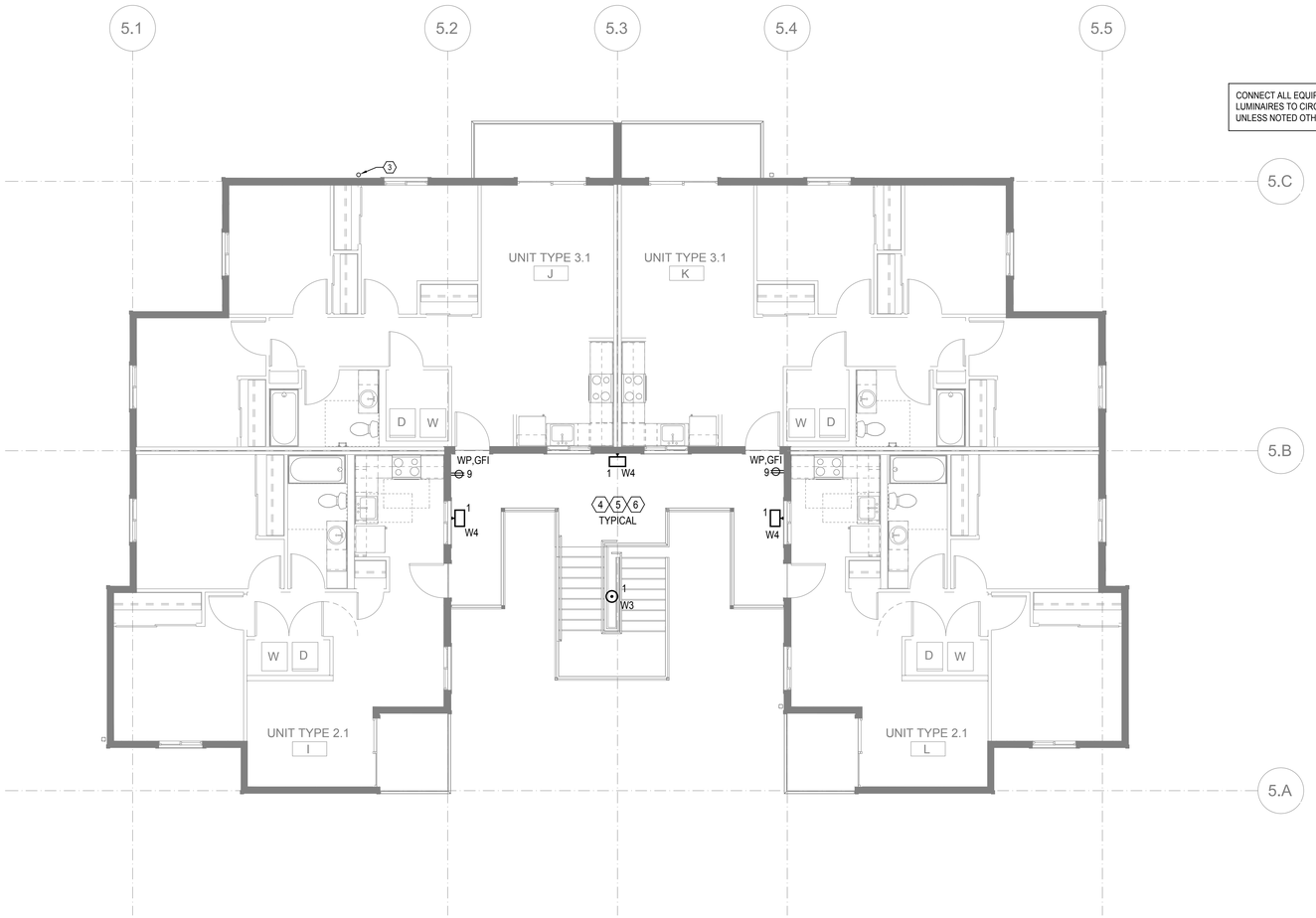

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POWER AND LIGHTING PLAN - BUILDING 11 - LEVEL 3

SCALE: 3/16"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

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King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 11

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

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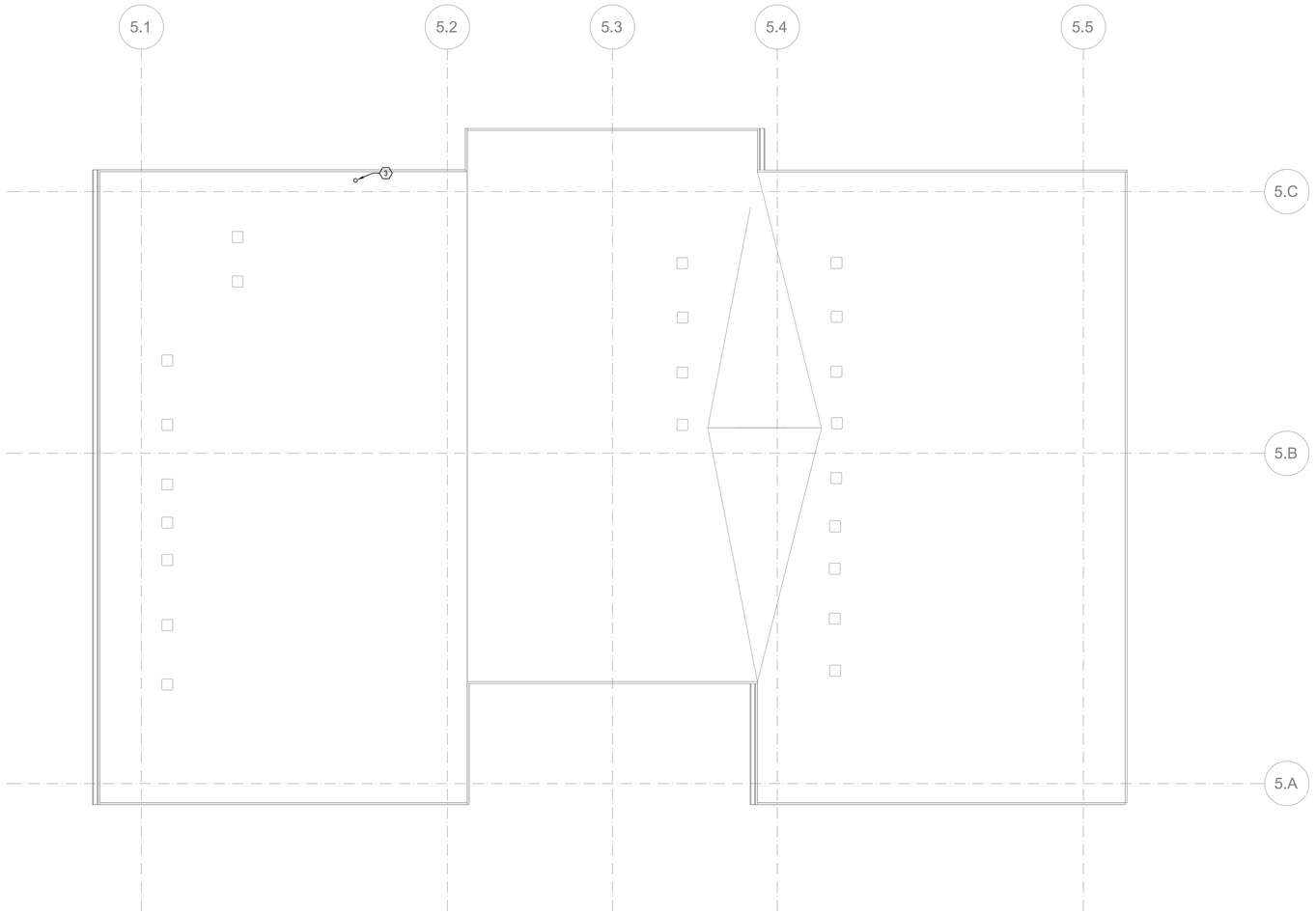
POWER AND LIGHTING PLAN - BUILDING 11 - LEVEL 3

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E11-103

10/7/2021 7:33:34 AM



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POWER PLAN - BUILDING 11 - ROOF

SCALE: 3/16"=1'-0"

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BID SET

GEORGINNA M. LAWSON
STATE OF WASHINGTON
43761
REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

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POWER PLAN - BUILDING 11 - ROOF

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E11-104

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

4/6/2023

GENERAL SCHEDULE NOTES:

A. AL= ALUMINUM (STABLOY CONDUCTORS WITH XHHW-2 INSULATION);
CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

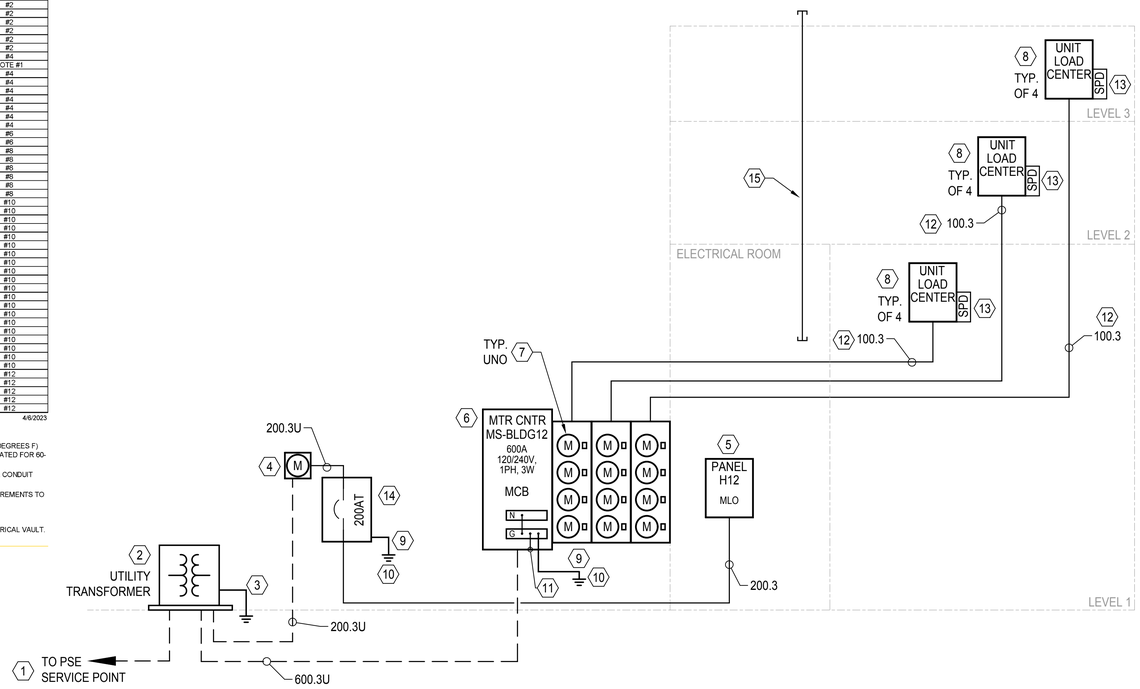
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE: NTS

FLAG NOTES (X):

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (12) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 12

UNIT TYPE: 2BR - 2.1 | **AREA (SF): 782** | 4/6/2023
DEMAND LOAD (kVA): 17.93 => 74.7 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =		AREA x 3VA/SF	=	2.35	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	6.85	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:		100%	=	3.00	kVA
3,001VA - 120,000VA:		35%	=	1.35	kVA
> 120,000VA		25%	=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	**4.35**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:		75%			
		GENERAL APPLIANCE LOAD - DEMAND		=	**1.65 kVA**

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	**0.14 kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	3.91 kVA
	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA
		TOTAL DWELLING UNIT LOAD PER NEC 220, PART III		=	**23.54 kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]			=	23.48 kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:		100%	=	10.00 kVA
> 10 kVA:		40%	=	5.39 kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS, 65% NAMEPLATE		=	2.54 kVA
		TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	**17.93 kVA**

UNIT TYPE: 3BR - 3.1 | **AREA (SF): 906** | 4/6/2023
DEMAND LOAD (kVA): 18.49 => 77.0 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =		AREA x 3VA/SF	=	2.72	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	7.22	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:		100%	=	3.00	kVA
3,001VA - 120,000VA:		35%	=	1.48	kVA
> 120,000VA		25%	=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	**4.48**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:		75%			
		GENERAL APPLIANCE LOAD - DEMAND		=	**1.65 kVA**

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	**0.14 kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	4.53 kVA
	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA
		TOTAL DWELLING UNIT LOAD PER NEC 220, PART III		=	**24.29 kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]			=	23.86 kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:		100%	=	10.00 kVA
> 10 kVA:		40%	=	5.54 kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS, 65% NAMEPLATE		=	2.94 kVA
		TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	**18.49 kVA**

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL | **MS - 12 unit STACK** | 4/6/2023
DEMAND LOAD (kVA): 137.09 => 571.2 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING APPLIANCES 1.5< X < 3.5kW QTY	1.5< X < 3.5kW LOAD (kVA)	3.5kW < X < 8.75kW QTY	3.5kW < X < 8.75kW LOAD (kVA)	8.75kW < X < 12kW QTY	8.75kW < X < 12kW LOAD (kVA)
2BR - 2.1	6	41.08	13.20	0.66	23.46	6	33.00	0	0.00	0	0.00	6	52.80
3BR - 3.1	6	43.31	13.20	0.66	27.18	6	33.00	0	0.00	0	0.00	6	52.80
0								0	0.00	0	0.00	0	0.00
TOTALS:	12	84.38	26.40	1.32	50.64	12	66.00	0	0.00	0	0.00	12	105.60
ADDITIONAL 25% OF LARGEST MOTOR:				0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD	=	334.37	kVA
DEMAND FACTOR FROM TABLE 220.84 =		41%	
TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC	=	**137.09**	**kVA**

KIRKLAND HEIGHTS - 12 UNIT STACK FLAT (REHAB)
PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 12):	137.09 kVA	
(SEE ATTACHED CALCS)		
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.		
RESIDENTIAL TOTAL:	137.09 kVA	
		571.22 AMPS @ 120/240V, 1-PHASE
		PROVIDE 600A RESIDENTIAL METER CENTER

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):		
LIGHTING - Breezeway +Interior:	1.5 kVA	
LIGHTING - SITE:	1.5 kVA	
GENERAL RECEPTACLES:	4.0 kVA	
MECHANICAL:	1.0 kVA	
ELECT HEAT (WATER RMS):	1.0 kVA	
CENTRAL HOT WATER (HPWH)	7.7 kVA	
ELECT SWING TANK	4.5 kVA	
HEAT TRACE	0.5 kVA	
MISCELLANEOUS:	2.5 kVA	
EV CHARGING (2):	16.6 kVA	
HOUSE TOTAL:	40.83 kVA	
		170.14 AMPS @ 120/240V, 1-PHASE
WITH 25% SPARE CAPACITY	51.04 kVA	
		212.6708 AMPS @ 120/240V, 1-PHASE
		PROVIDE 200A HOUSE SERVICE
TOTAL BUILDING SERVICE:	188.13 kVA	
		783.89 AMPS @ 120/240V, 1-PHASE

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS
13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 12
BID SET

JOHANNA M. [illegible] STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE
SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	E12-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	CONDUCTORS PER SET PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
400.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
400.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#12
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.
B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H12 — FED FROM: XFR — LOCATION: ELECTRICAL ROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 200 AMPS — M.L.O. OR M.C.B.: M.L.O. — 200 AMPS

CKT #	DESCRIPTION	CONN LOAD TYPE	kVA	CKT TAG	CB AMPS/#P	PH	CB AMPS/#P	CKT TAG	CONN LOAD TYPE	kVA	DESCRIPTION	CKT #
1	LTG - BREEZEWAY	L	0.21	20-1	20 / 1	A	20 / 1	20-1	N	0.80	FIRE ALARM CONTROL PANEL	2
3	SPARE		0.00		20 / 1	B	20 / 1	20-1	N	0.24	LTG TIME CLOCK	4
5	RECEPT - LVL 1 BREEZEWAY	R	0.36	20-1	20 / 1	A	20 / 1			0.00	SPARE	6
7	RECEPT - LVL 2 BREEZEWAY	R	0.36	20-1	20 / 1	B	20 / 1	20-1	R	0.54	RECEPTS - ELECT RM	8
9	RECEPT - LVL 3 BREEZEWAY	R	0.36	20-1	20 / 1	A	20 / 1	20-1	R	0.72	RECEPTS - TELECOM	10
11	LTG - ELECT / MECH CLOSETS	L	0.24	20-1	20 / 1	B	20 / 1	20-1	R	0.36	RECEPTS - TELECOM	12
13	ELECT HEATER - FIRE SPRINKLER	C	1.50	20-1	20 / 1	A	20 / 1			0.00	SPARE	14
15	EX-HAUST FAN (EF-1 & MOTO DAMPER	M	0.24	20-1	20 / 1	B	20 / 1	20-1	R	0.72	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20-2N	C	1.73	HEATPUMP WATER HTR - VAH-1	18
19	SPARE		0.00		20 / 1	B						20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20-1	20 / 1	A	15 / 2	20-2N	C	1.73	HEATPUMP WATER HTR - VAH-2	22
23	SPARE		0.00		20 / 1	B						24
25	SPARE		0.00		20 / 1	A	15 / 2	20-2N	C	1.73	HEATPUMP WATER HTR - VAH-3	26
27	SPARE		0.00		20 / 1	B						28
29	SPACE ONLY					A	30 / 2	30-2N	C	4.50	WASHING MACH - WAH-1*	30
31	SPACE ONLY					B						32
33	SPACE ONLY					A	20 / 1	20-1	N	0.36	CIRC PUMP "CP-1" & MIX VALVE "MV-1"	34
35	SPACE ONLY					B	20 / 1	20-1	R	0.72	HEAT TRACE - HEATPUMP WATER LINES	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

	CONNECTED LOAD		DEMAND FACTOR	DEMAND LOAD	
L = LIGHTING	0.51	kVA	125%	0.64	kVA
R = RECEPTACLES	4.14	kVA	NEC 220.44	4.14	kVA
M = MOTORS	0.24	kVA	100%	0.24	kVA
PLUS 25% OF LARGEST MOTOR	0.24	kVA	25%	0.06	kVA
C = CONTINUOUS	11.18	kVA	125%	13.98	kVA
N = NON-CONTINUOUS	1.44	kVA	100%	1.44	kVA
K = KITCHEN	0.00	kVA	75%	0.00	kVA

PANEL CONNECTED TOTAL:
17.51 kVA
72.98 AMPS

PANEL DEMAND TOTAL:
20.50 kVA
85.41 AMPS

NOTES:
A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER.

LOAD CENTER - 2 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O. OR M.C.B.: M.L.O. — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/#P	PH	CB AMPS/#P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20-1	20 / 1	A	40 / 2	40-2N	RANGE	2
3	GEN LTG, RECEPTS, SD (1)	20-1	20 / 1	B			-	4
5	RECEPTS, ERV, MEDIA PNL (1)	20-1	20 / 1	A	20 / 2	20-2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20-1	20 / 1	B			-	8
9	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	A	20 / 3	20-3	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	B			-	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	30 / 2	30-2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20-1	20 / 1	B			-	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	20 / 1	20-1	WASHER (2)	18
19				B	20 / 1	20-1	DED RECEPT - A/C UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

LOAD CENTER - 3 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O. OR M.C.B.: M.L.O. — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/#P	PH	CB AMPS/#P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20-1	20 / 1	A	40 / 2	40-2N	RANGE	2
3	GEN LTG, RECEPTS, SD (1)	20-1	20 / 1	B			-	4
5	RECEPTS, ERV, MEDIA PNL (1)	20-1	20 / 1	A	20 / 2	20-2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20-1	20 / 1	B			-	8
9	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	A	20 / 3	20-3	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	B			-	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	30 / 2	30-2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20-1	20 / 1	B			-	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	20 / 1	20-1	WASHER (2)	18
19				B	20 / 1	20-1	DED RECEPT - A/C UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-3	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-1	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.163					2
			/						
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS; CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES. DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	240 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3

NOTES:
1. CONFIRM EXACT LOCATION WITH ARCHITECT.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 12 UNIT STACKED FLATS

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES BED 1	BED 2	BED 3	LIVING
A	2-BDRM	CH-0.84	CH-0.7		CH-1.8
B	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
C	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
D	2-BDRM	CH-0.84	CH-0.7		CH-1.8
E	2-BDRM	CH-0.56	CH-0.56		CH-0.93
F	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
G	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
H	2-BDRM	CH-0.56	CH-0.56		CH-0.93
I	2-BDRM	CH-0.7	CH-0.56		CH-1.12
J	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
K	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
L	2-BDRM	CH-0.7	CH-0.56		CH-1.12

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.

B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 12

BID SET

GEORGINNA M. BROOKSON — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

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SCHEDULES

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JOB NO.	22016
SHEET NO.:	

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/630 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE
& SPECS FOR ALL 'S' LIGHTING FIXTURES.

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 12

BID SET

GEORGINNA M. TAYLOR STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

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LUMINAIRE SCHEDULE

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DRAWN RA, JF
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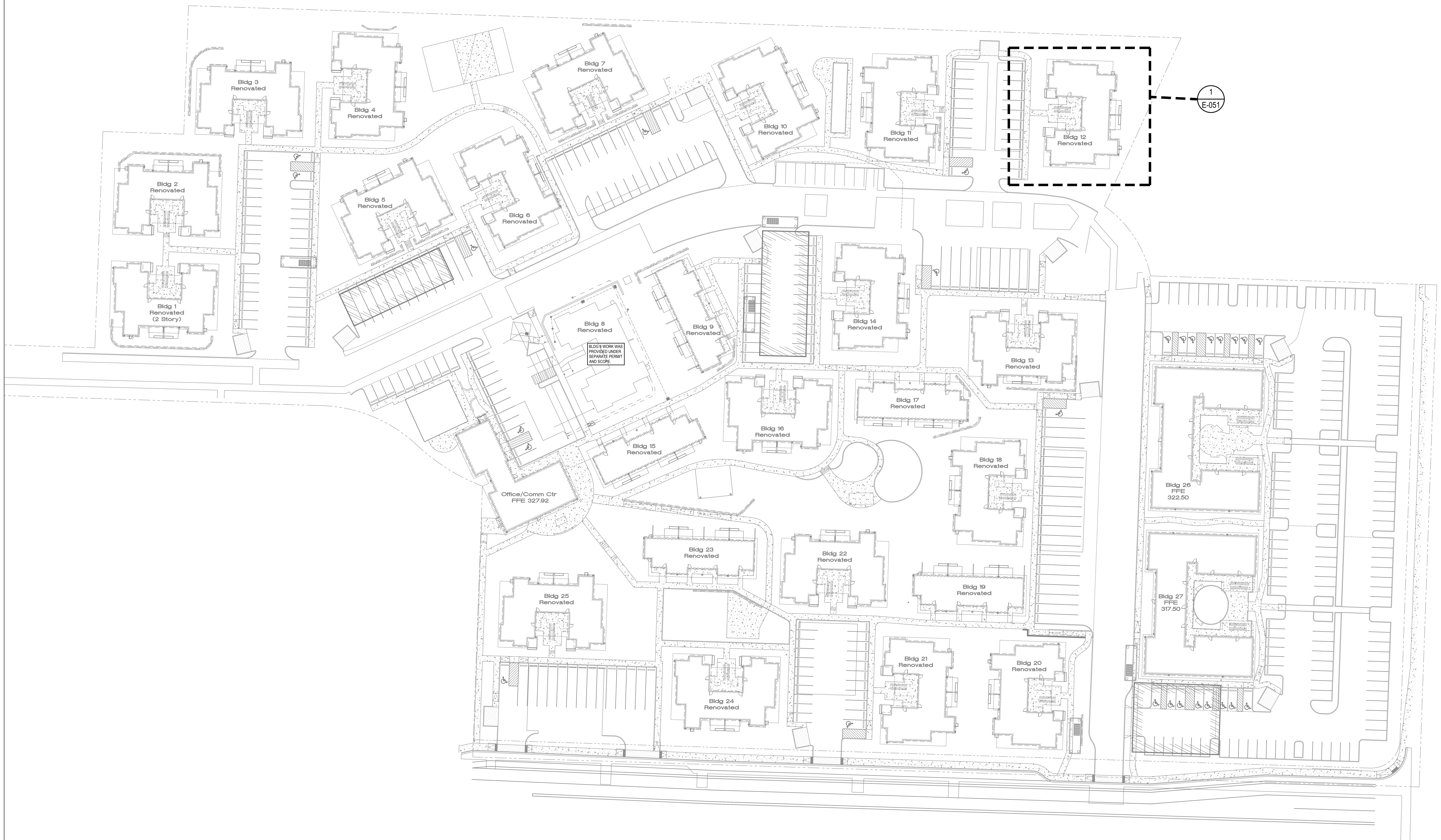
ISSUE DATE 4/14/2023
JOB NO. 22016
SHEET NO.:

E12-005



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OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
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DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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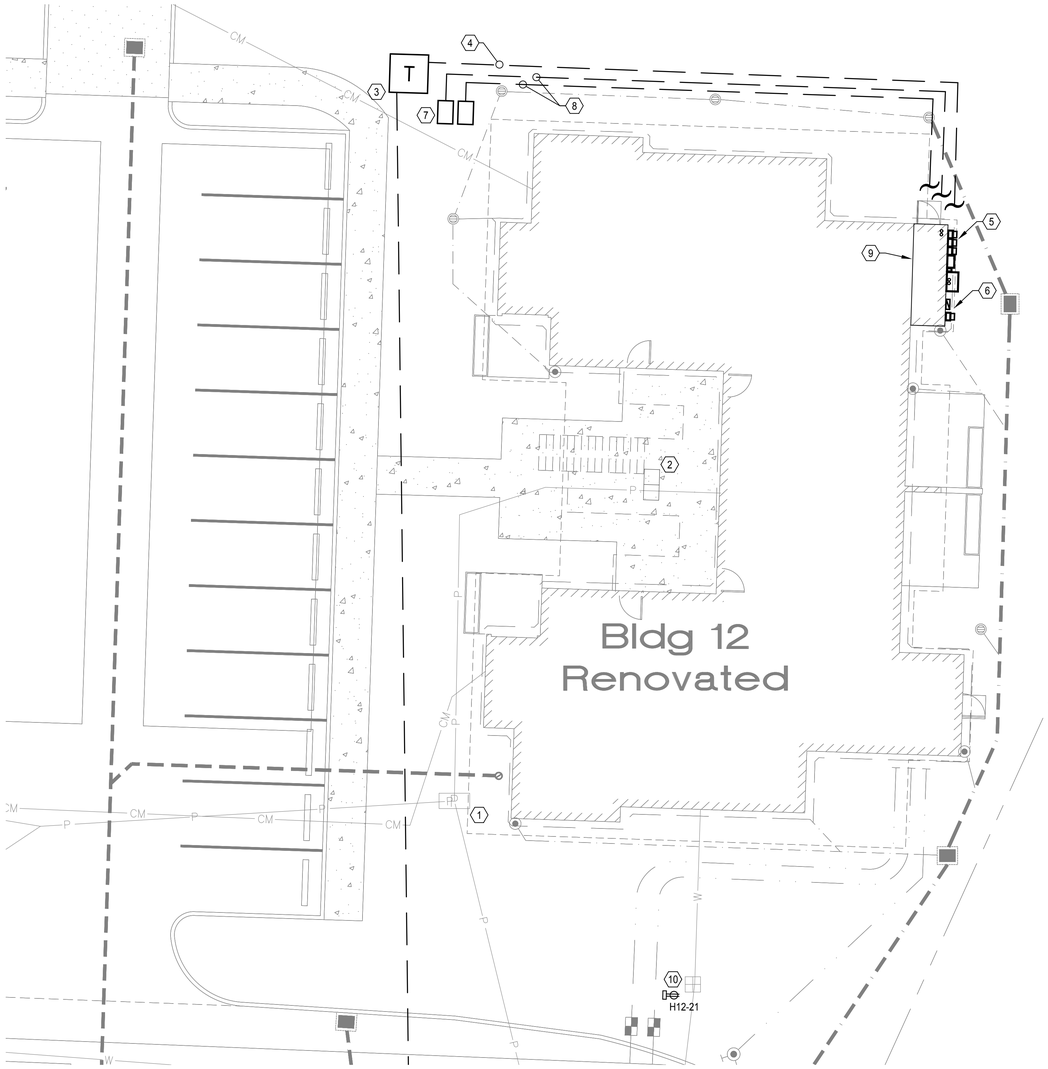
ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.



ELECTRICAL SITE PLAN - BUILDING 12
SCALE: 1/8" = 1'-0"

FLAG NOTES (X):

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 12

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

ELECTRICAL SITE PLAN - BUILDING 12

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E12-051

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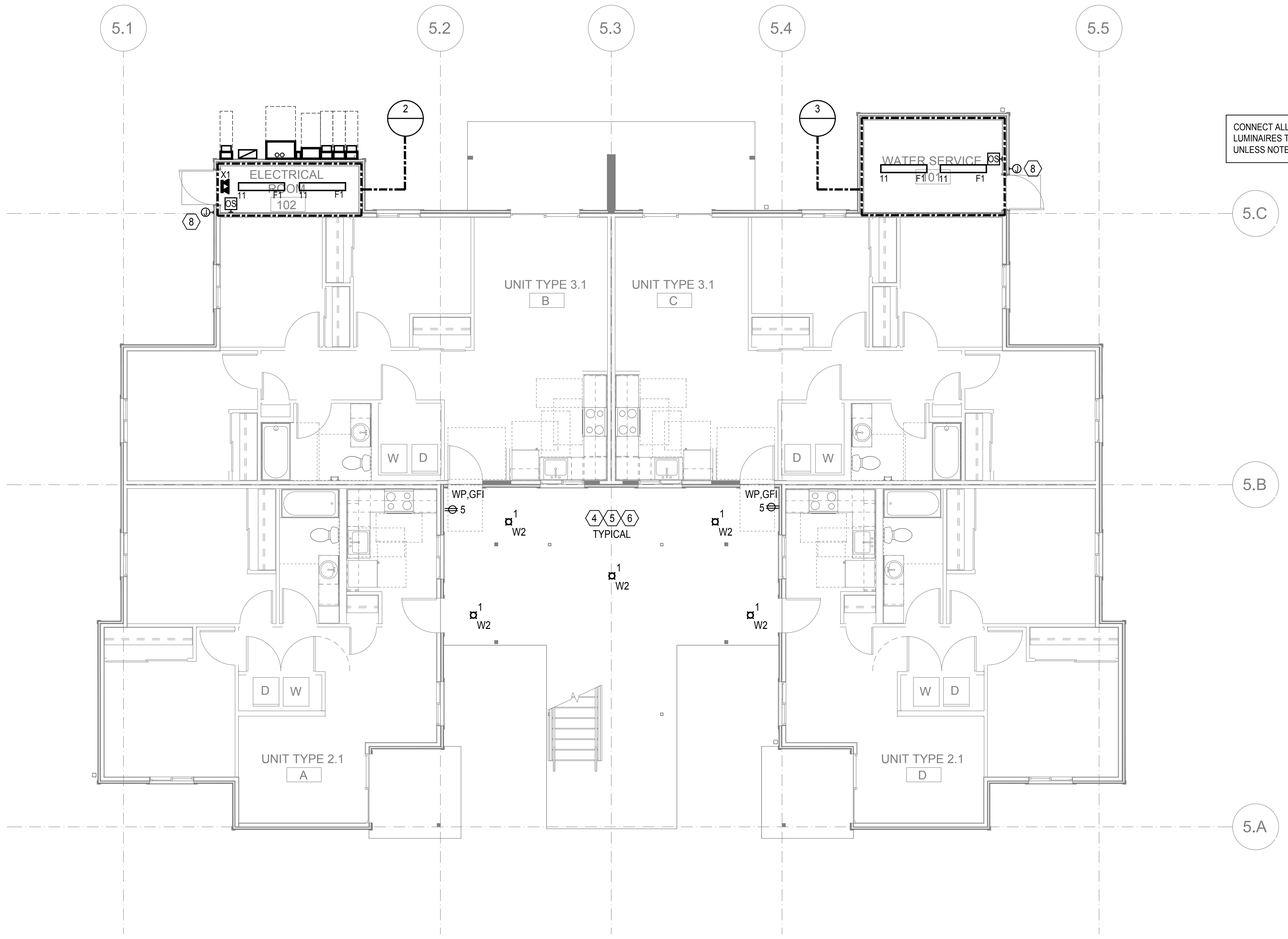


POWER AND LIGHTING PLAN - BUILDING 12 - LEVEL 1

SCALE: 3/16"=1'-0"

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

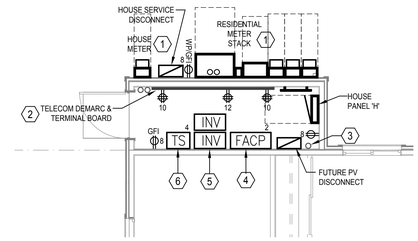
B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

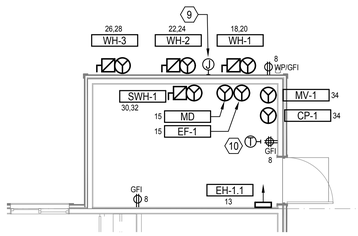
D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.
2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-375-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.
7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.
8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.
10. CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



2 / E-101 ELECTRICAL ROOM
1/4"=1'-0"



3 / E-101 WATER ROOM
1/4"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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PH: 206.623.1104
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King County Housing Authority

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c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 12

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

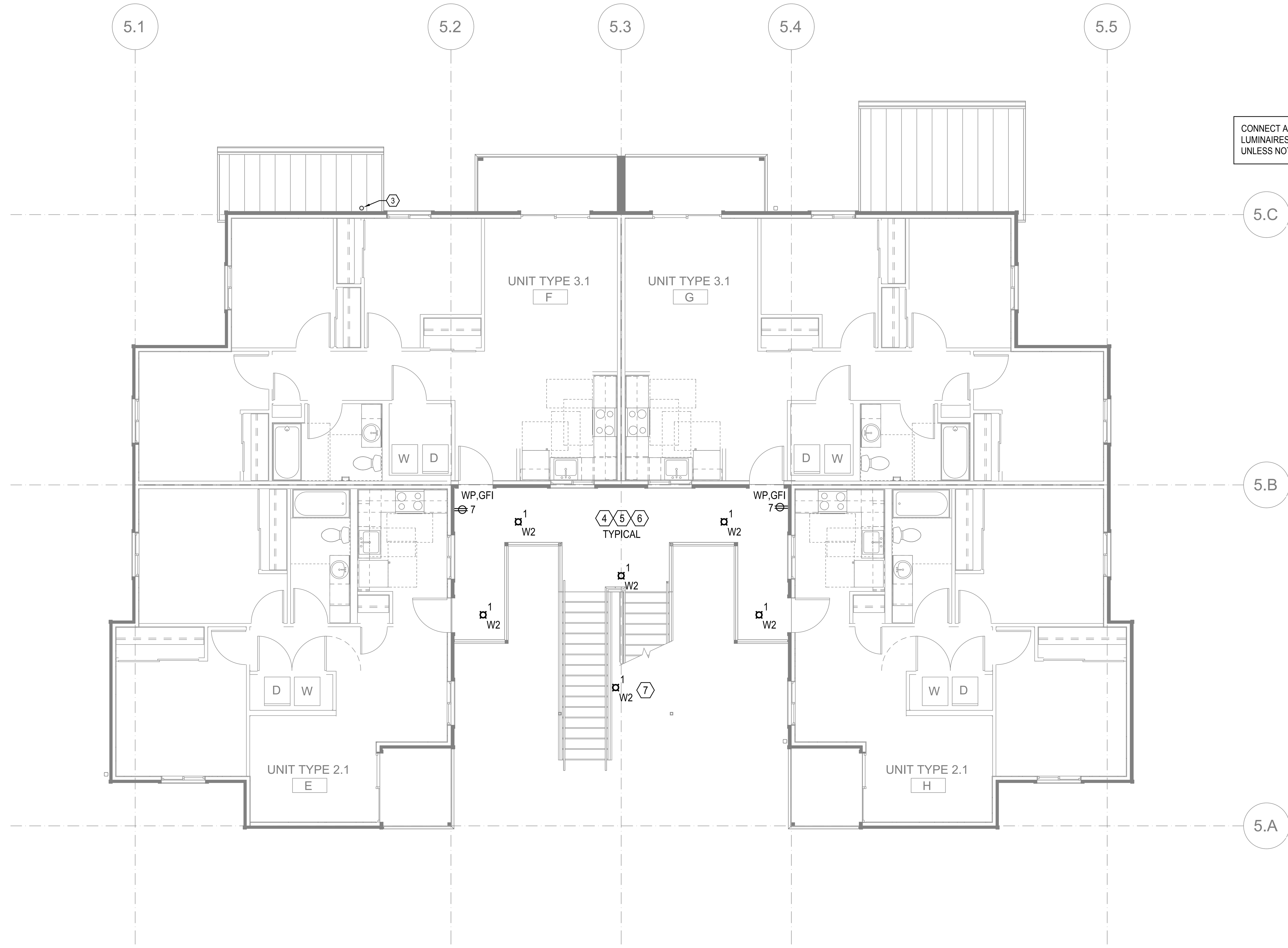
TITLE

POWER AND LIGHTING PLAN - BUILDING 12 - LEVEL 1

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E12-101

10/7/2021 7:33:34 AM



CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H12 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES ⟨X⟩:

1. NOT USED
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-375-SD
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7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.

POWER AND LIGHTING PLAN - BUILDING 12 - LEVEL 2

SCALE: 3/16"=1'-0"

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 12

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 12 - LEVEL 2

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

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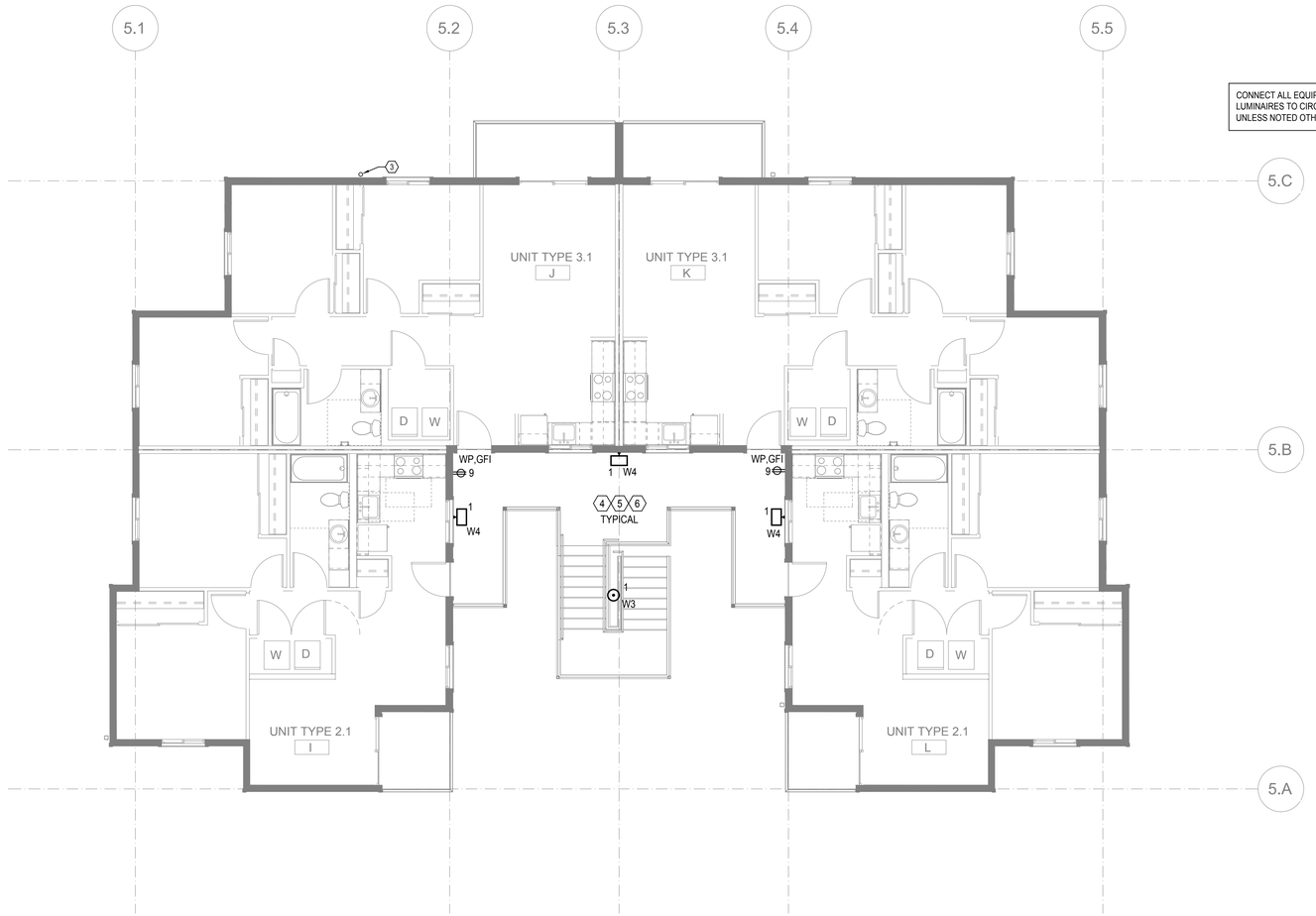

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H12 UNLESS NOTED OTHERWISE.

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SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

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POWER AND LIGHTING PLAN - BUILDING 12 - LEVEL 3

SCALE: 3/16"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 12

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 12 - LEVEL 3

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

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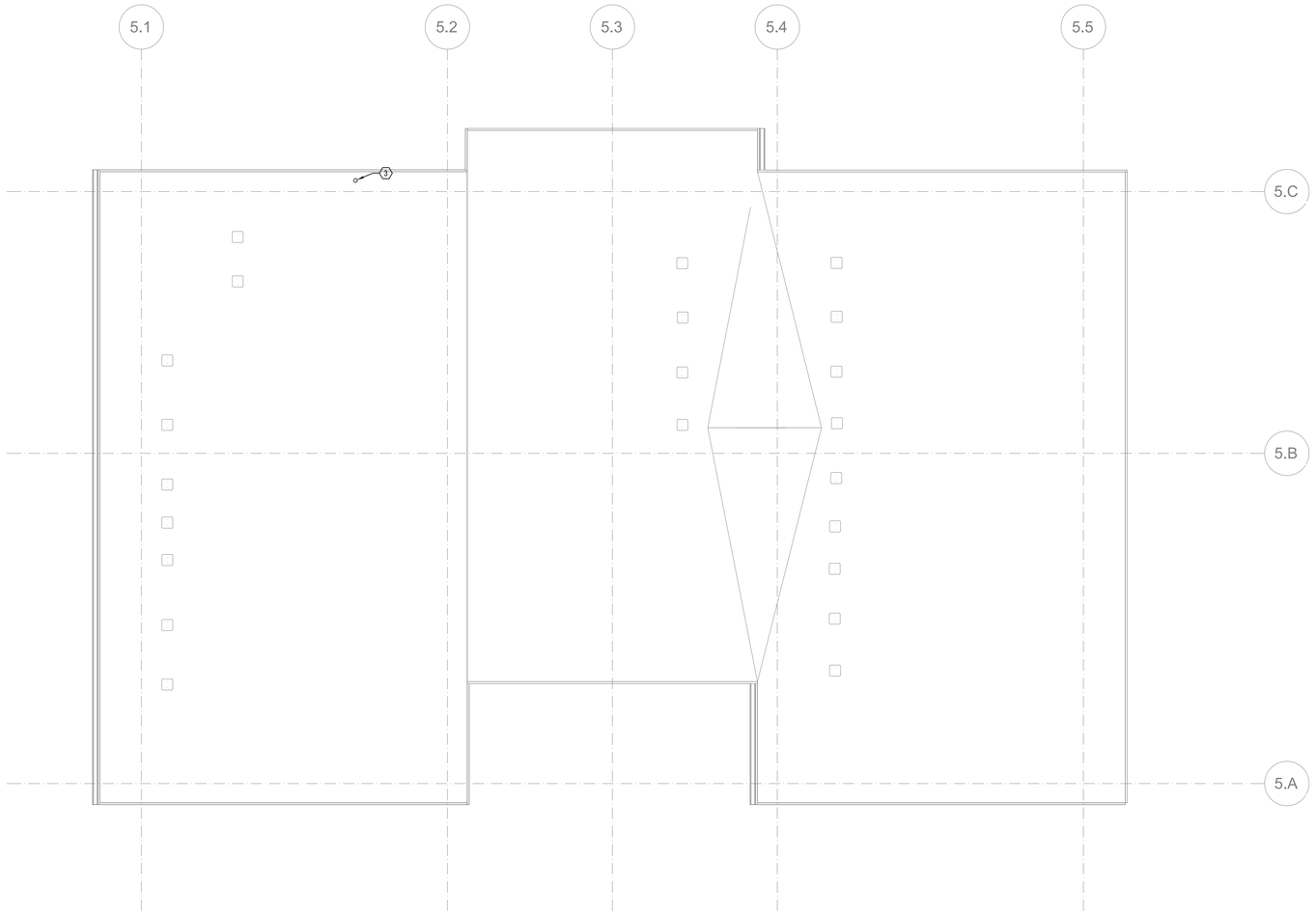

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FLAG NOTES (X):

1. NOT USED
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

POWER PLAN - BUILDING 12 - ROOF

SCALE: 3/16"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 12

BID SET

GEORGINNA M. JACKSON
STATE OF WASHINGTON
43761
REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER PLAN - BUILDING 12 - ROOF

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016

SHEET NO.:

E12-104

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
		CONDUCTORS PER SET		
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION);
CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

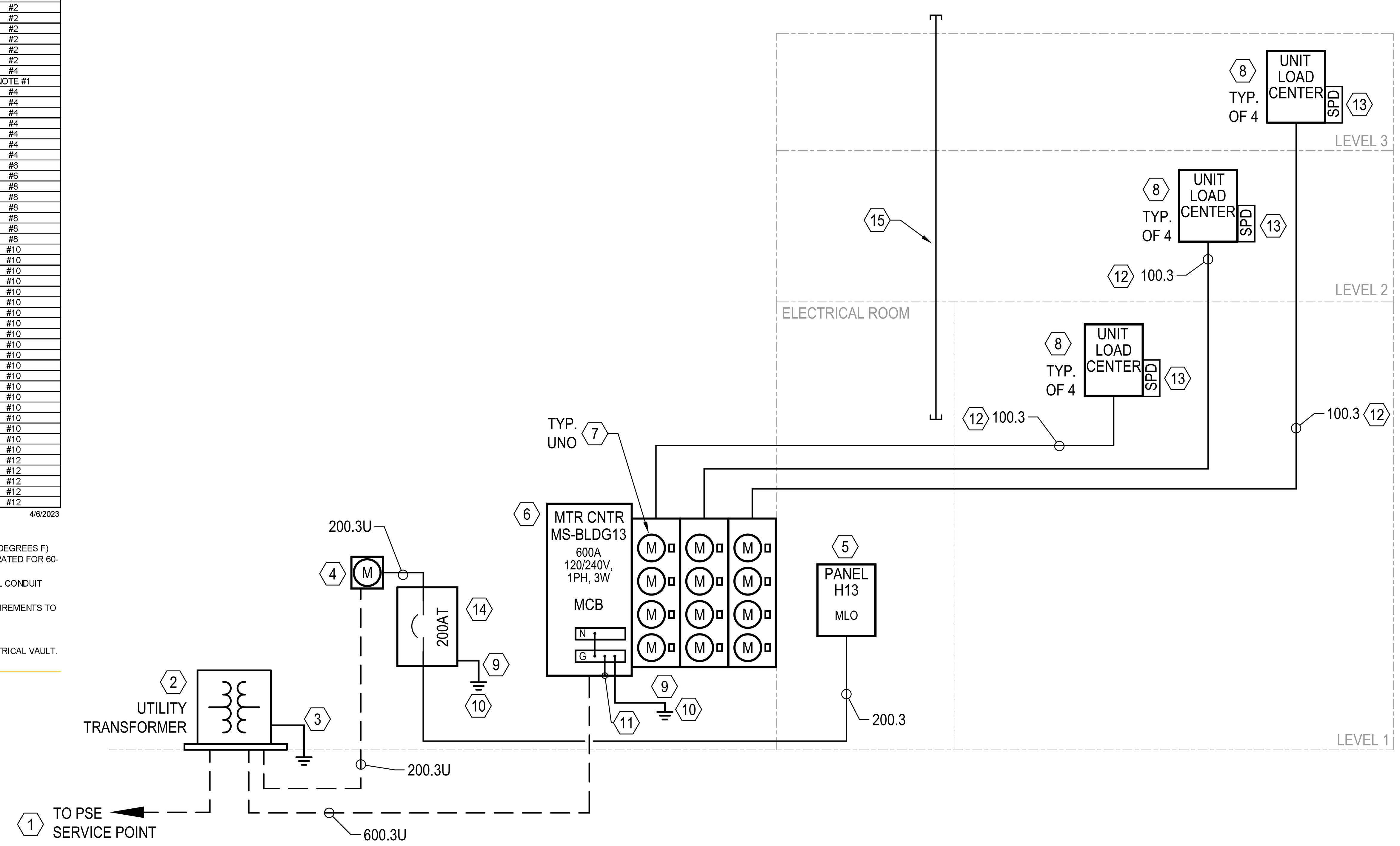
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE:NTS

FLAG NOTES ⓧ :

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (12) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 13

UNIT TYPE: 2BR - 2.1 AREA (SF): 782 4/6/2023
DEMAND LOAD (kVA): 17.93 => 74.7 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	2.35	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2 CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1 CKTS x 1500VA	=	1.50	kVA
SUBTOTAL (CONNECTED)		=	6.85	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:				
0 - 3,000VA:	100%	=	3.00	kVA
3,001VA - 120,000VA:	35%	=	1.35	kVA
> 120,000VA:	25%	=	0.00	kVA
GENERAL LIGHTING LOAD - DEMAND		=	**4.35**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)			
REFRIGERATOR	1	AT	0.7	=	0.70	kVA
RANGE HOOD	1	AT	0.3	=	0.30	kVA
MICROWAVE		AT		=	0.00	kVA
DISHWASHER		AT		=	0.00	kVA
WASHER	1	AT	1.2	=	1.20	kVA
GARBAGE DISPOSAL		AT		=	0.00	kVA
WATER HEATER		AT		=	0.00	kVA
SUBTOTAL (CONNECTED)				=	2.20	kVA
APPLIANCE DEMAND FACTOR [220.53]:			75%			
GENERAL APPLIANCE LOAD - DEMAND				=	**1.65**	**kVA**

MOTORS [220.50]:

	QTY		LOAD (kVA EACH)			
TOILET EXHAUST FAN		AT		=	0.00	kVA
ERV UNIT	1	AT	0.11	=	0.11	kVA
KITCHEN EXHAUST FAN		AT		=	0.00	kVA
+25% OF LARGEST MOTOR				=	0.03	kVA
GENERAL MOTOR LOAD - DEMAND				=	**0.14**	**kVA**
100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	3.91	kVA
	QTY		LOAD (kVA EACH)			
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50	kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00	kVA
ELECTRIC OVEN [220.55]		AT		=	0.00	kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00	kVA
TOTAL DWELLING UNIT LOAD PER NEC 220, PART III				=	**23.54**	**kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.48	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	5.39	kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS; 65% NAMEPLATE	=	2.54	kVA
TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV		=	**17.93**	**kVA**

UNIT TYPE: 3BR - 3.1 AREA (SF): 906 4/6/2023
DEMAND LOAD (kVA): 18.49 => 77.0 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	2.72	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2 CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1 CKTS x 1500VA	=	1.50	kVA
SUBTOTAL (CONNECTED)		=	7.22	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:				
0 - 3,000VA:	100%	=	3.00	kVA
3,001VA - 120,000VA:	35%	=	1.48	kVA
> 120,000VA:	25%	=	0.00	kVA
GENERAL LIGHTING LOAD - DEMAND		=	**4.48**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)			
REFRIGERATOR	1	AT	0.7	=	0.70	kVA
RANGE HOOD	1	AT	0.3	=	0.30	kVA
MICROWAVE		AT		=	0.00	kVA
DISHWASHER		AT		=	0.00	kVA
WASHER	1	AT	1.2	=	1.20	kVA
GARBAGE DISPOSAL		AT		=	0.00	kVA
WATER HEATER		AT		=	0.00	kVA
SUBTOTAL (CONNECTED)				=	2.20	kVA
APPLIANCE DEMAND FACTOR [220.53]:			75%			
GENERAL APPLIANCE LOAD - DEMAND				=	**1.65**	**kVA**

MOTORS [220.50]:

	QTY		LOAD (kVA EACH)			
TOILET EXHAUST FAN		AT		=	0.00	kVA
ERV UNIT	1	AT	0.11	=	0.11	kVA
KITCHEN EXHAUST FAN		AT		=	0.00	kVA
+25% OF LARGEST MOTOR				=	0.03	kVA
GENERAL MOTOR LOAD - DEMAND				=	**0.14**	**kVA**
100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	4.53	kVA
	QTY		LOAD (kVA EACH)			
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50	kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00	kVA
ELECTRIC OVEN [220.55]		AT		=	0.00	kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00	kVA
TOTAL DWELLING UNIT LOAD PER NEC 220, PART III				=	**24.29**	**kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.86	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	5.54	kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS; 65% NAMEPLATE	=	2.94	kVA
TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV		=	**18.49**	**kVA**

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL MS - 12 unit STACK 4/6/2023

DEMAND LOAD (kVA): 137.09 => 571.2 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING 1.5< X < 3.5kW QTY	COOKING 1.5< X < 3.5kW LOAD (kVA)	COOKING 3.5kW < X < 8.75kW QTY	COOKING 3.5kW < X < 8.75kW LOAD (kVA)	COOKING 8.75kW < X < 12kW QTY	COOKING 8.75kW < X < 12kW LOAD (kVA)
2BR - 2.1	6	41.08	13.20	0.66	23.46	6	33.00	0	0.00	0	0.00	6	52.80
3BR - 3.1	6	43.31	13.20	0.66	27.18	6	33.00	0	0.00	0	0.00	6	52.80
0								0	0.00	0	0.00	0	0.00
TOTALS:	12	84.38	26.40	1.32	50.64	12	66.00	0	0.00	0	0.00	12	105.60
ADDITIONAL 25% OF LARGEST MOTOR:				0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD = 334.37 kVA
DEMAND FACTOR FROM TABLE 220.84 = 41%

TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC = 137.09 kVA

KIRKLAND HEIGHTS - 12 UNIT STACK FLAT (REHAB)

PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 12):	137.09	kVA
(SEE ATTACHED CALCS)		
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.		
RESIDENTIAL TOTAL:	137.09	kVA
	571.22	AMPS @ 120/240V, 1-PHASE
	PROVIDE 600A RESIDENTIAL METER CENTER	

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):		
LIGHTING - Breezeway +Interior:	1.5	kVA
LIGHTING - SITE:	1.5	kVA
GENERAL RECEPTACLES:	4.0	kVA
MECHANICAL:	1.0	kVA
ELECT HEAT (WATER RMS):	1.0	KVA
CENTRAL HOT WATER (HPWH)	7.7	KVA
ELECT SWING TANK	4.5	KVA
HEAT TRACE	0.5	kVA
MISCELLANEOUS:	2.5	kVA
EV CHARGING (2):	16.6	kVA
HOUSE TOTAL:	40.83	kVA
	170.14	AMPS @ 120/240V, 1-PHASE
WITH 25% SPARE CAPACITY	51.04	kVA
	212.6708	AMPS @ 120/240V, 1-PHASE
	PROVIDE 200A HOUSE SERVICE	
TOTAL BUILDING SERVICE:	188.13	kVA
	783.89	AMPS @ 120/240V, 1-PHASE

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 13

BID SET

GEORGINNA M. ... STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E13-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	CONDUCTORS PER SET PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILITY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.
B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H13 — FED FROM: XFR — LOCATION: ELECTRICAL ROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 200 AMPS — MLO OR MCB: MLO — 200 AMPS

CKT #	DESCRIPTION	CONN LOAD TYPE	kVA	CKT TAG	CB AMPS/#P	PH	CB AMPS/#P	CKT TAG	CONN LOAD TYPE	kVA	DESCRIPTION	CKT #
1	LTG - BREEZEWAY	L	0.27	20-1	20 / 1	A	20 / 1	20-1	N	0.60	FIRE ALARM CONTROL PANEL	2
3	SPARE		0.00		20 / 1	B	20 / 1	20-1	N	0.04	LTG TIME CLOCK	4
5	RECEPT - LVL 1 BREEZEWAY	R	0.36	20-1	20 / 1	A	20 / 1			0.00	SPARE	5
7	RECEPT - LVL 2 BREEZEWAY	R	0.36	20-1	20 / 1	B	20 / 1	20-1	R	0.54	RECEPTS - ELECT RM	8
9	RECEPT - LVL 3 BREEZEWAY	R	0.36	20-1	20 / 1	A	20 / 1	20-1	R	0.72	RECEPTS - TELECOM	10
11	LTG - ELECT / MECH CLOSETS	L	0.24	20-1	20 / 1	B	20 / 1	20-1	R	0.36	RECEPTS - TELECOM	12
13	ELECT HEATER - FIRE SPRINKLER	C	1.50	20-1	20 / 1	A	20 / 1			0.00	SPARE	14
15	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.24	20-1	20 / 1	B	20 / 1	20-1	R	0.72	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20-2N	C	1.73	HEATPUMP-WATER HTR - WH-1	18
19	SPARE		0.00		20 / 1	B						20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20-1	20 / 1	A	15 / 2	20-2N	C	1.73	HEATPUMP-WATER HTR - WH-2	22
23	SPARE		0.00		20 / 1	B						24
25	SPARE		0.00		20 / 1	A	15 / 2	20-2N	C	1.73	HEATPUMP-WATER HTR - WH-3	26
27	LTG - SITE POLES	L	0.09	20-1	20 / 1	B						28
29	SPACE ONLY					A	30 / 2	30-2N	C	4.50	WH-SWING TANK- "SWH-1"	30
31	SPACE ONLY					B						32
33	SPACE ONLY					A	20 / 1	20-1	N	0.36	CIRC PUMP "CP-1 & MX VALVE "MV-1"	34
35	SPACE ONLY					B	20 / 1	20-1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

	CONNECTED LOAD		DEMAND FACTOR	DEMAND LOAD	
L = LIGHTING	0.89	kVA	125%	1.11	kVA
R = RECEPTACLES	4.14	kVA	NEC 220.44	4.14	kVA
M = MOTORS	0.24	kVA	100%	0.24	kVA
PLUS 25% OF LARGEST MOTOR	0.24	kVA	25%	0.06	kVA
C = CONTINUOUS	11.18	kVA	125%	13.98	kVA
N = NON-CONTINUOUS	1.44	kVA	100%	1.44	kVA
K = KITCHEN	0.00	kVA	75%	0.00	kVA

PANEL CONNECTED TOTAL: 17.89 kVA, 74.56 AMPS
PANEL DEMAND TOTAL: 20.97 kVA, 87.39 AMPS

NOTES:
A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER.

LOAD CENTER - 2 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — MLO OR MCB: MCB — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/#P	PH	CB AMPS/#P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20-1	20 / 1	A	40 / 2	40-2N	RANGE	2
3	GEN LTG, RECEPTS, SD (1)	20-1	20 / 1	B				4
5	RECEPTS, ERV, MEDIA PNL (1)	20-1	20 / 1	A	20 / 2	20-2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20-1	20 / 1	B				8
9	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	A	20 / 3	20-3	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	B				12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	30 / 2	30-2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20-1	20 / 1	B				16
17	DED RECEPT - AC UNIT (BY TENANT)	20-1	20 / 1	A	20 / 1	20-1	WASHER (2)	18
19				B				20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

LOAD CENTER - 3 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — MLO OR MCB: MLO — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/#P	PH	CB AMPS/#P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20-1	20 / 1	A	40 / 2	40-2N	RANGE	2
3	GEN LTG, RECEPTS, SD (1)	20-1	20 / 1	B				4
5	RECEPTS, ERV, MEDIA PNL (1)	20-1	20 / 1	A	20 / 2	20-2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20-1	20 / 1	B				8
9	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	A	20 / 3	20-3	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	B				12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	30 / 2	30-2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20-1	20 / 1	B				16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	20 / 1	20-1	WASHER (2)	18
19				B	20 / 1	20-1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-3	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
ERV-1	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.163					2
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3

GENERAL SCHEDULE NOTES: 4/9/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS; CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES. DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	240 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3

NOTES:
1. CONFIRM EXACT LOCATION WITH ARCHITECT.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 12 UNIT STACKED FLATS

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES BED 1	BED 2	BED 3	LIVING
A	2-BDRM	CH-0.84	CH-0.7		CH-1.8
B	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
C	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
D	2-BDRM	CH-0.84	CH-0.7		CH-1.8
E	2-BDRM	CH-0.56	CH-0.56		CH-0.93
F	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
G	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
H	2-BDRM	CH-0.56	CH-0.56		CH-0.93
I	2-BDRM	CH-0.7	CH-0.56		CH-1.12
J	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
K	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
L	2-BDRM	CH-0.7	CH-0.56		CH-1.12

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.

B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 13

BID SET

VIRGINNA M. [illegible] — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

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PERMIT #	
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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/630 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE
& SPECS FOR ALL 'S' LIGHTING FIXTURES.

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

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New Kirkland Heights LLLP
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13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 13

BID SET

GEORGINNA M. LAMPSON
STATE OF WASHINGTON
43761
REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

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LUMINAIRE SCHEDULE

PERMIT #	
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ISSUE DATE	4/14/2023
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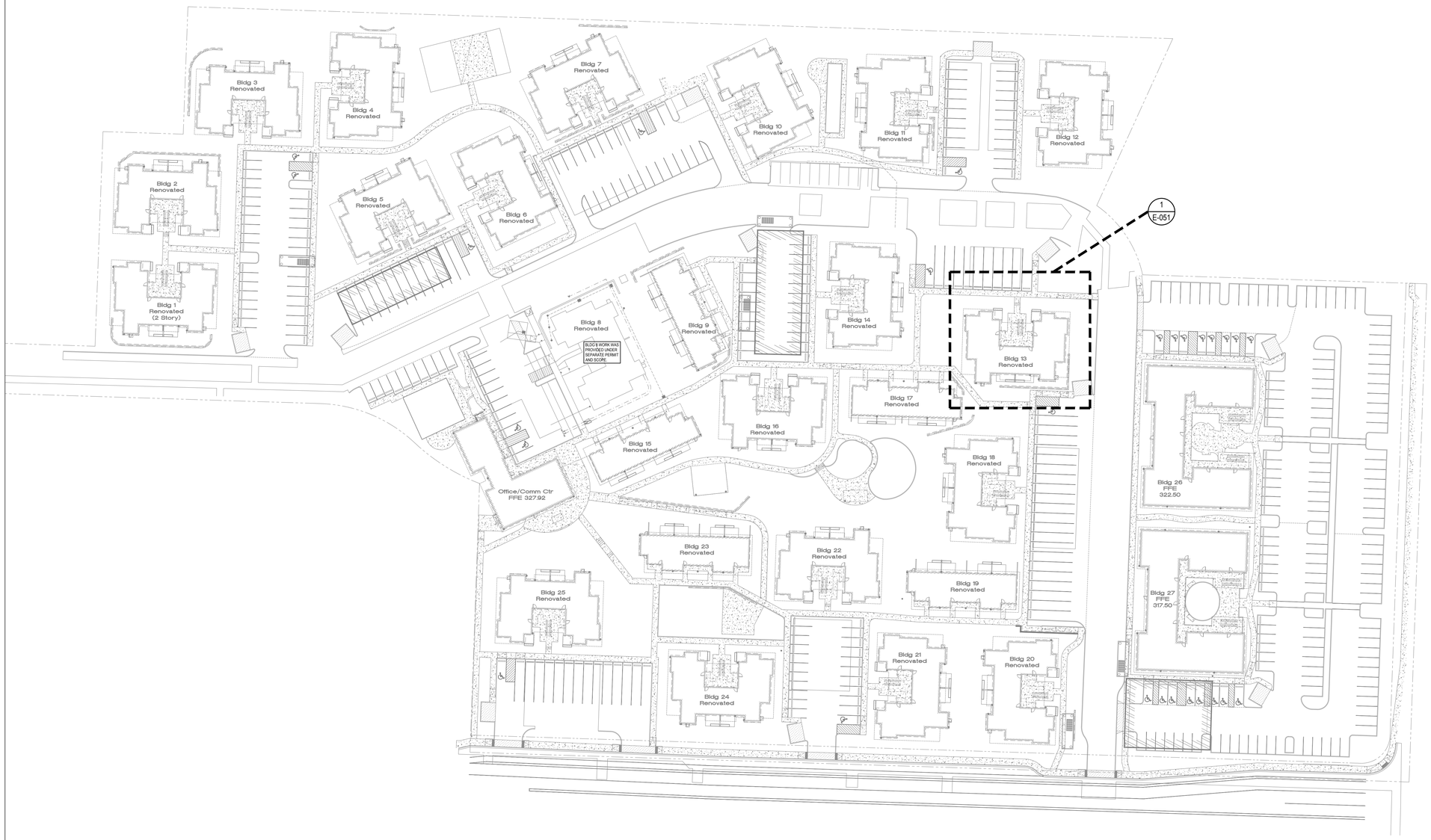

OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
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PH: 206.623.1104
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OVERALL PROJECT SITE PLAN

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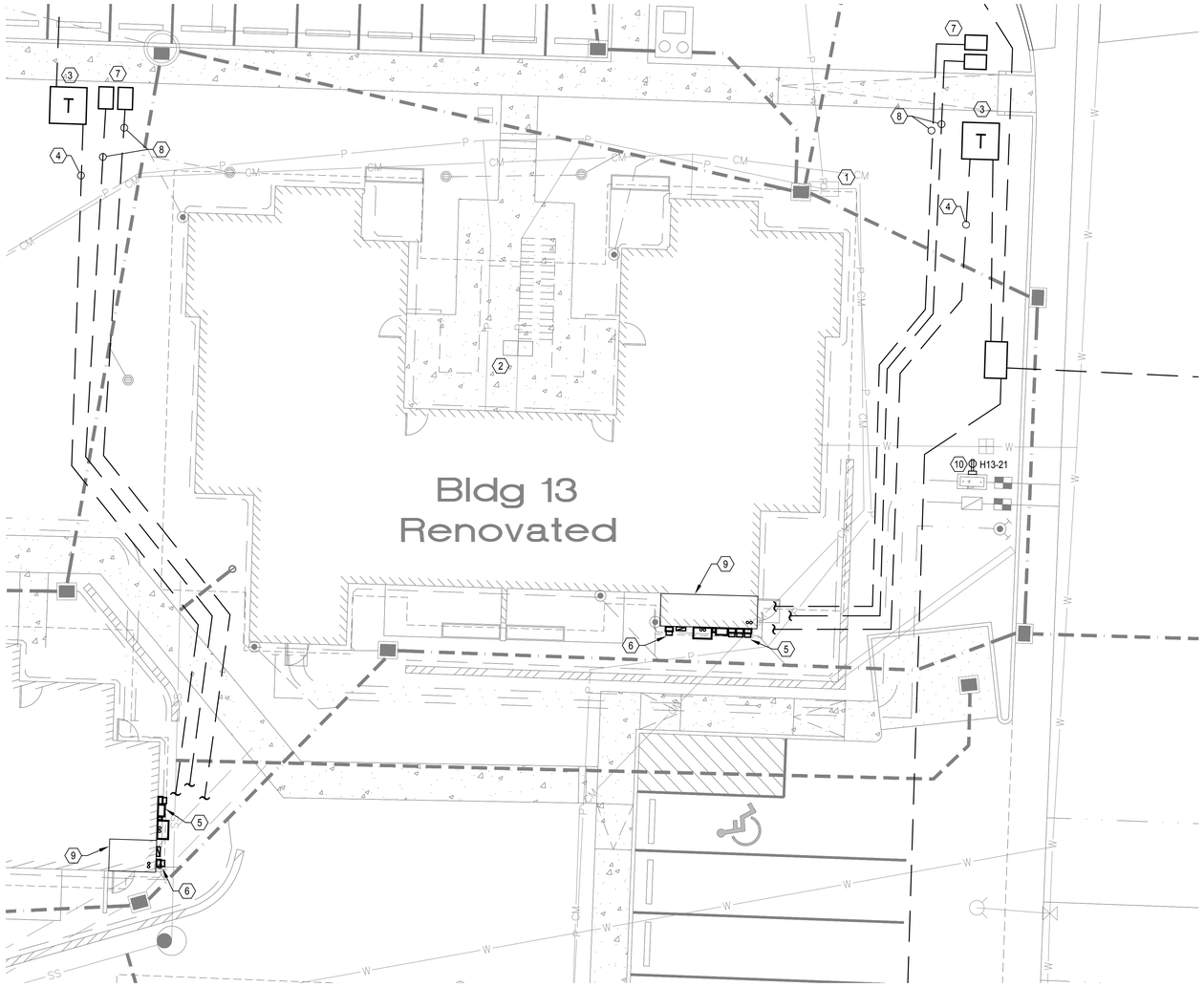
ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.



ELECTRICAL SITE PLAN - BUILDING 13
SCALE: 1/8" = 1'-0"

FLAG NOTES (X):

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
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KIRKLAND HEIGHTS APARTMENTS

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BUILDING 13

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ELECTRICAL SITE PLAN - BUILDING 13

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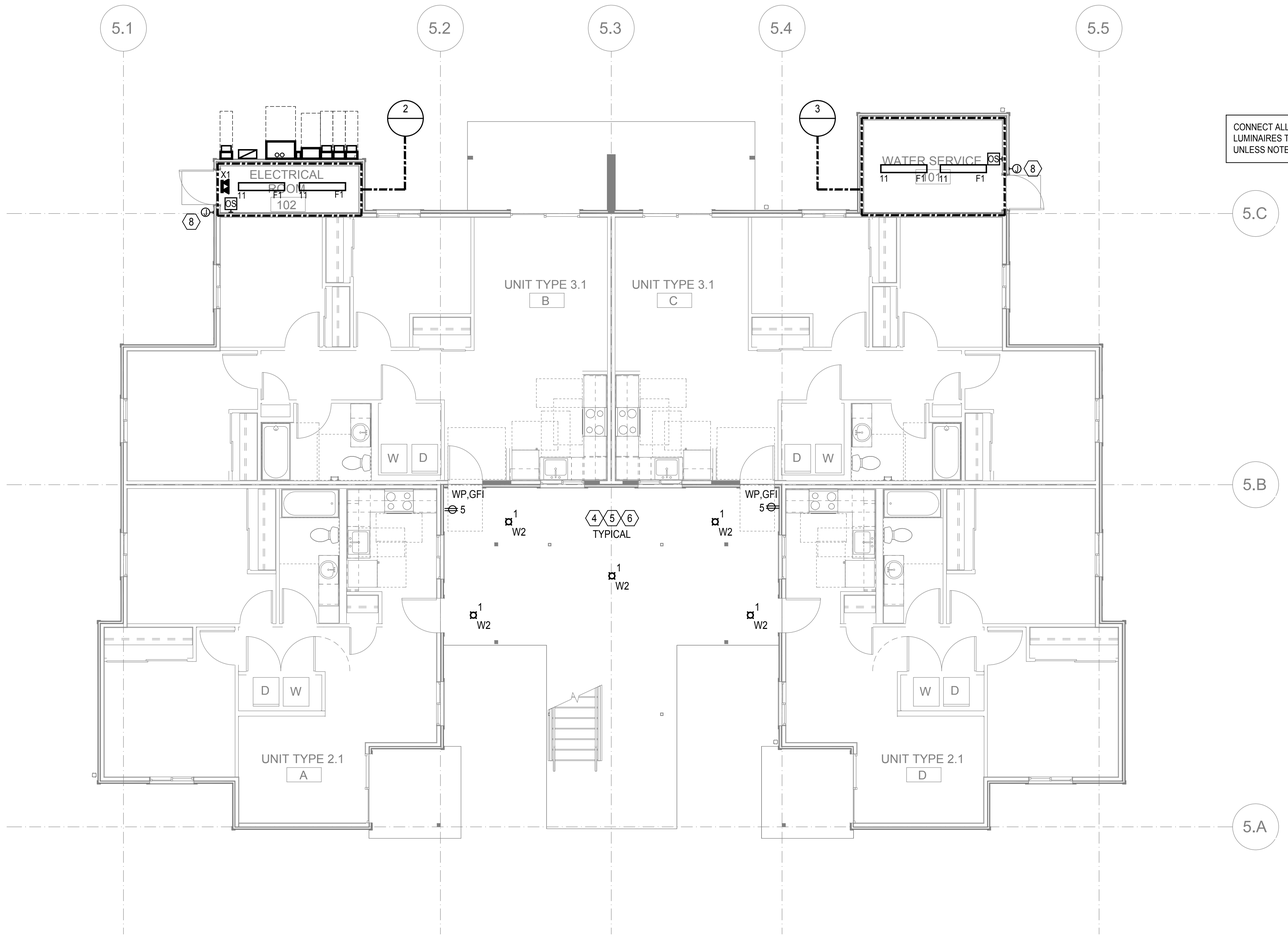


CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H13 UNLESS NOTED OTHERWISE.

POWER AND LIGHTING PLAN - BUILDING 13 - LEVEL 1

SCALE: 3/16"=1'-0"

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

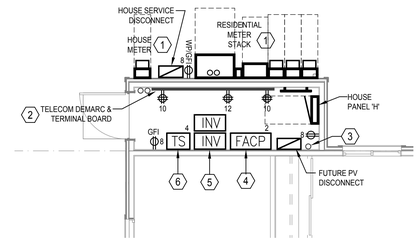
B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

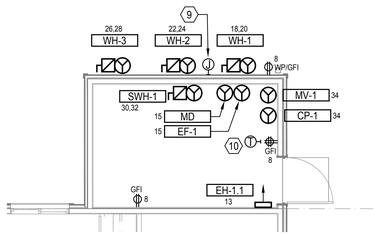
D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.
2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-375-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.
7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.
8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.
10. CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



2 E-101 **ELECTRICAL ROOM**
1/4"=1'-0"



3 E-101 **WATER ROOM**
1/4"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 13

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 13 - LEVEL 1

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

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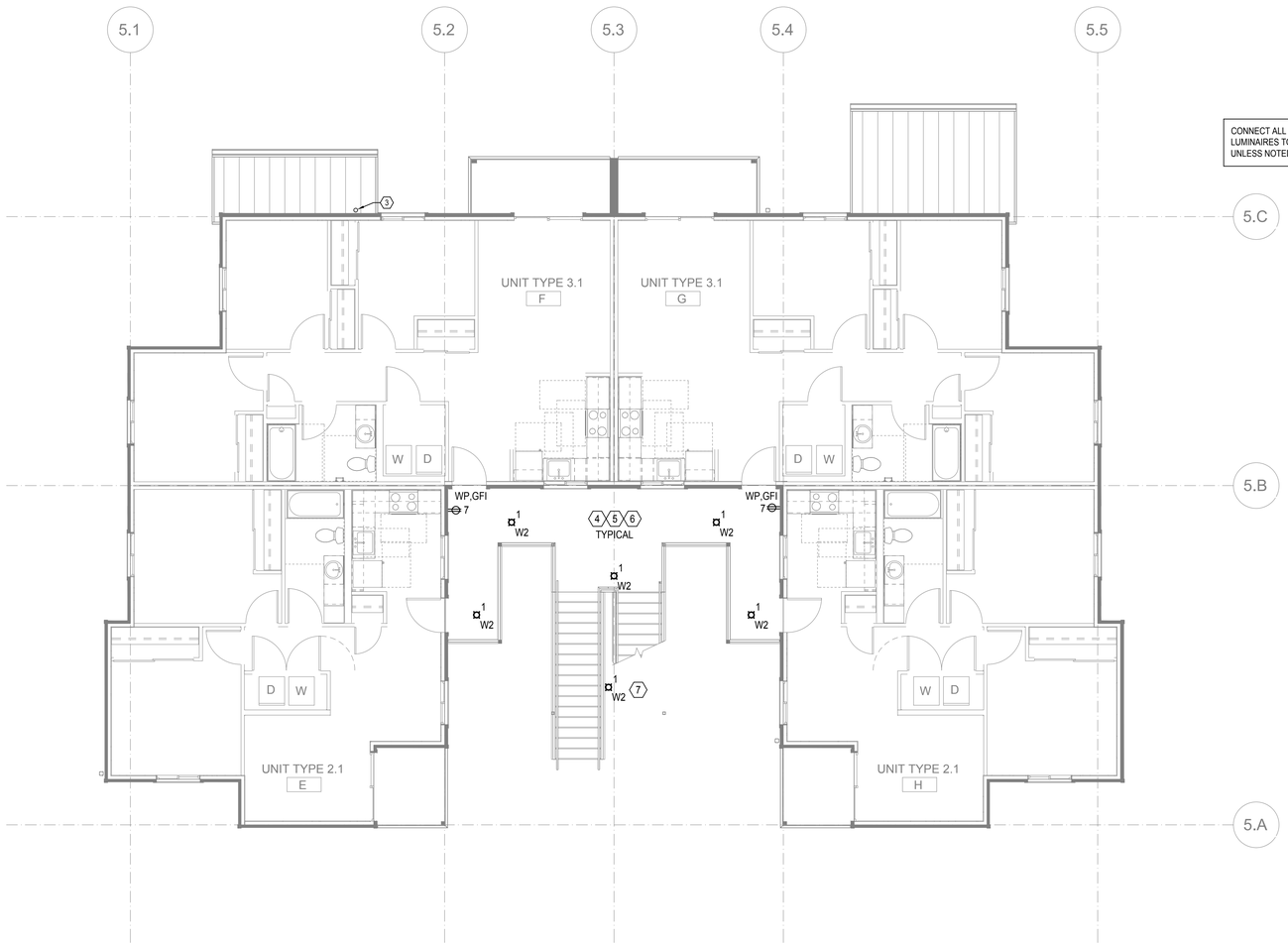

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H13 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
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7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.

POWER AND LIGHTING PLAN - BUILDING 13 - LEVEL 2

SCALE: 3/16"=1'-0"

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
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Seattle, WA 98104

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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 13

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

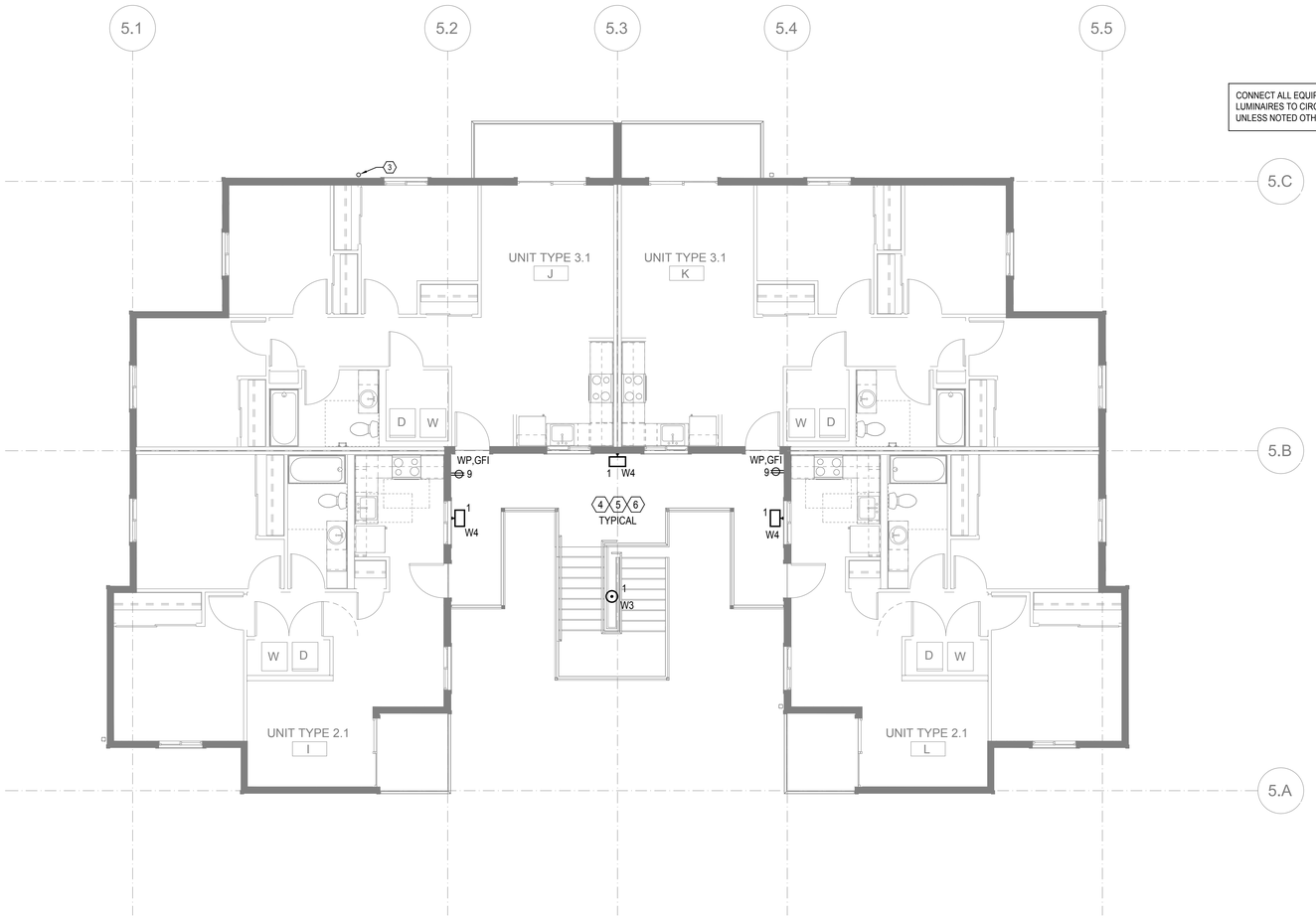
TITLE

POWER AND LIGHTING PLAN - BUILDING 13 - LEVEL 2

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E13-102

10/7/2021 7:33:34 AM



CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H13 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

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POWER AND LIGHTING PLAN - BUILDING 13 - LEVEL 3

SCALE: 3/16"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 13

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 13 - LEVEL 3

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E13-103

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ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

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2. NOT USED.

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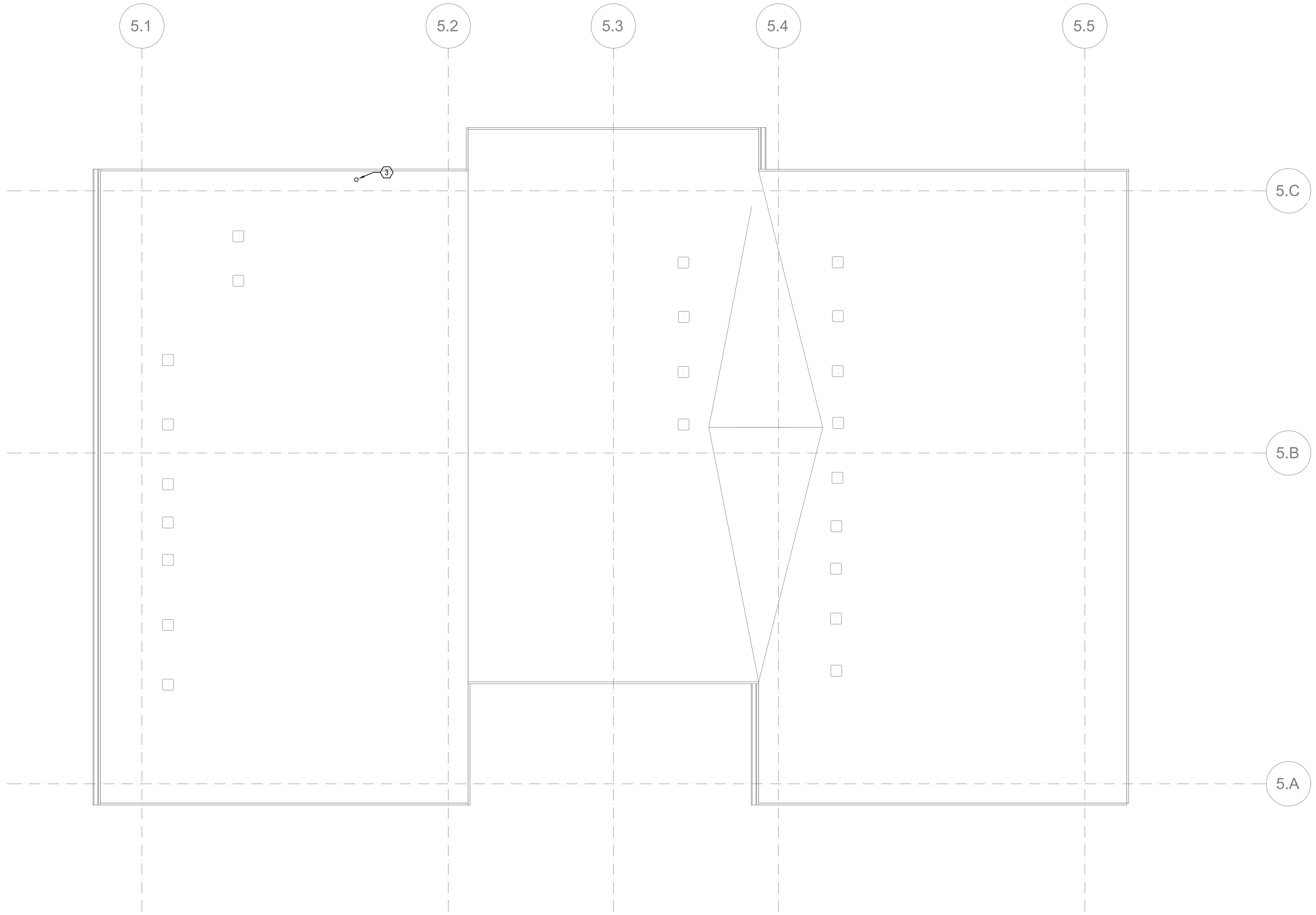

POWER PLAN - BUILDING 13 - ROOF

SCALE: 3/16"=1'-0"

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St., Kirkland, WA 98034

BUILDING 13

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER PLAN - BUILDING 13 - ROOF

PERMIT #	
DRAWN	RA, JF
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ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

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FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION);
CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

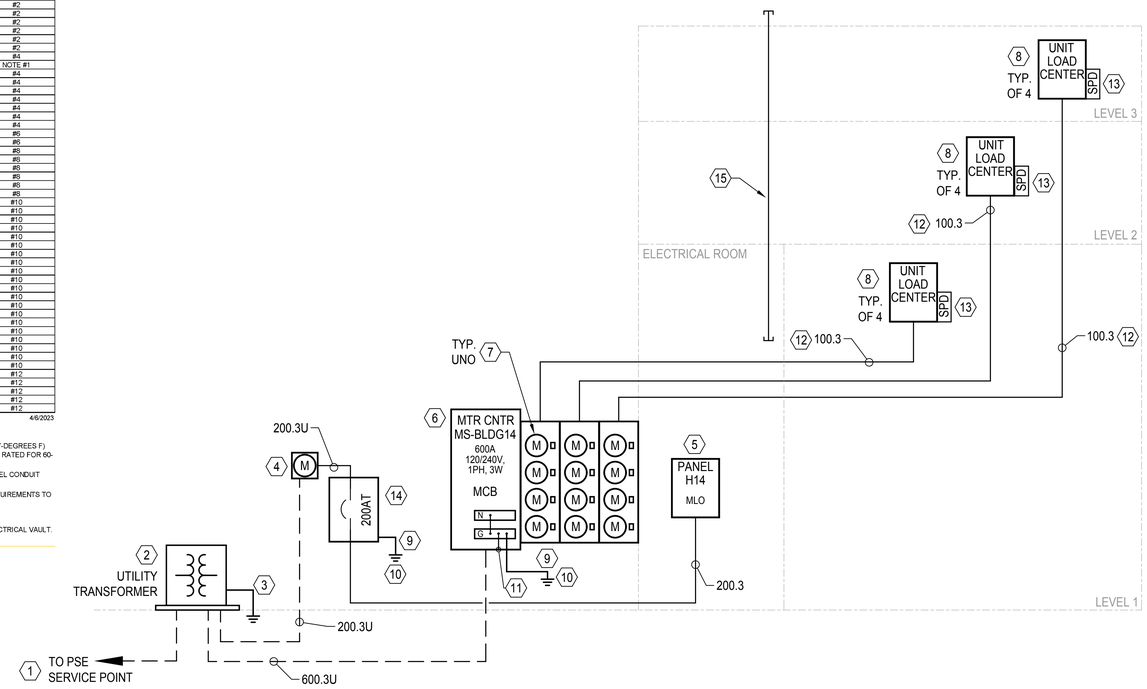
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE: NTS

FLAG NOTES ⓧ :

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (12) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 14

UNIT TYPE: 2BR - 2.1 AREA (SF): 782 — 4/6/2023
DEMAND LOAD (kVA): 17.93 => 74.7 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	2.35	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	6.85	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:	100%		=	3.00	kVA
3,001VA - 120,000VA:	35%		=	1.35	kVA
> 120,000VA	25%		=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	4.35	kVA

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:		75%			
		GENERAL APPLIANCE LOAD - DEMAND		=	1.65 kVA

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	0.14 kVA

100% AC EQUIP [220.50] / SPACE HEATING [220.51]			=	3.91 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA
		TOTAL DWELLING UNIT LOAD PER NEC 220, PART III	=	23.54	kVA

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.48	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10KVA:	100%	=	10.00	kVA
> 10 KVA:	40%	=	5.39	kVA

ELECTRIC HEAT AND AC [220.82(C)]:

LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS; 65% NAMEPLATE	=	2.54	kVA
	TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	17.93	kVA

UNIT TYPE: 3BR - 3.1 AREA (SF): 906 — 4/6/2023
DEMAND LOAD (kVA): 18.49 => 77.0 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	2.72	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	7.22	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:	100%		=	3.00	kVA
3,001VA - 120,000VA:	35%		=	1.48	kVA
> 120,000VA	25%		=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	4.48	kVA

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:		75%			
		GENERAL APPLIANCE LOAD - DEMAND		=	1.65 kVA

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	0.14 kVA

100% AC EQUIP [220.50] / SPACE HEATING [220.51]			=	4.53 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA
		TOTAL DWELLING UNIT LOAD PER NEC 220, PART III	=	24.29	kVA

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.86	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10KVA:	100%	=	10.00	kVA
> 10 KVA:	40%	=	5.54	kVA

ELECTRIC HEAT AND AC [220.82(C)]:

LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS; 65% NAMEPLATE	=	2.94	kVA
	TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	18.49	kVA

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL MS - 12 unit STACK — 4/6/2023
DEMAND LOAD (kVA): 137.09 => 571.2 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING APPLIANCES 1.5< X < 3.5kW QTY	1.5< X < 3.5kW LOAD (kVA)	3.5kW < X < 8.75kW QTY	3.5kW < X < 8.75kW LOAD (kVA)	8.75kW < X < 12kW QTY	8.75kW < X < 12kW LOAD (kVA)
2BR - 2.1	6	41.08	13.20	0.66	23.46	6	33.00	0	0.00	0	0.00	6	52.80
3BR - 3.1	6	43.31	13.20	0.66	27.18	6	33.00	0	0.00	0	0.00	6	52.80
0								0	0.00	0	0.00	0	0.00
TOTALS:	12	84.38	26.40	1.32	50.64	12	66.00	0	0.00	0	0.00	12	105.60
ADDITIONAL 25% OF LARGEST MOTOR:				0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD	=	334.37	kVA
DEMAND FACTOR FROM TABLE 220.84 =		41%	
TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC	=	137.09	kVA

KIRKLAND HEIGHTS - 12 UNIT STACK FLAT (REHAB)
PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 12):	137.09 kVA
(SEE ATTACHED CALCS)	
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.	
RESIDENTIAL TOTAL:	137.09 kVA
	571.22 AMPS @ 120/240V, 1-PHASE
	PROVIDE 600A RESIDENTIAL METER CENTER

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):	
LIGHTING - Breezeway +Interior:	1.5 kVA
LIGHTING - SITE:	1.5 kVA
GENERAL RECEPTACLES:	4.0 kVA
MECHANICAL:	1.0 kVA
ELECT HEAT (WATER RMS):	1.0 kVA
CENTRAL HOT WATER (HPWH)	7.7 kVA
ELECT SWING TANK	4.5 kVA
HEAT TRACE	0.5 kVA
MISCELLANEOUS:	2.5 kVA
EV CHARGING (2):	16.6 kVA
HOUSE TOTAL:	40.83 kVA
	170.14 AMPS @ 120/240V, 1-PHASE
WITH 25% SPARE CAPACITY	51.04 kVA
	212.6708 AMPS @ 120/240V, 1-PHASE
	PROVIDE 200A HOUSE SERVICE
TOTAL BUILDING SERVICE:	188.13 kVA
	783.89 AMPS @ 120/240V, 1-PHASE

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 14

BID SET

JOHANNA M. [illegible] — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E14-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	CONDUCTORS PER SET PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#6
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILITY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.
B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H14 — FED FROM: XFR — LOCATION: ELECTRICAL ROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 200 AMPS — M.L.O OR M.C.B.: M.L.O — 200 AMPS

CKT #	DESCRIPTION	CONN LOAD TYPE	CONN LOAD kVA	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	CONN LOAD TYPE	CONN LOAD kVA	DESCRIPTION	CKT #
1	LTG - BREEZEWAY	R	0.21	20-1	20 / 1	A	20 / 1	20-1	N	0.60	FIRE ALARM CONTROL PANEL	2
3	SPARE		0.00		20 / 1	B	20 / 1	20-1	N	0.24	LTG TIME CLOCK	4
5	RECEPT - LVL 1 BREEZEWAY	R	0.36	20-1	20 / 1	A	20 / 1			0.00	SPARE	6
7	RECEPT - LVL 1 BREEZEWAY	R	0.36	20-1	20 / 1	B	30 / 1	20-1	R	0.54	RECEPTS - ELECT RM	8
9	RECEPT - LVL 3 BREEZEWAY	R	0.36	20-1	20 / 1	A	20 / 1	20-1	R	0.72	RECEPTS - TELECOM	10
11	LTG - ELECT / MECH CLOSETS	L	0.24	20-1	20 / 1	B	20 / 1	20-1	R	0.36	RECEPTS - TELECOM	12
13	ELECT HEATER - FIRE SPRINKLER	C	1.50	20-1	20 / 1	A	20 / 1			0.00	SPARE	14
15	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.24	20-1	20 / 1	B	20 / 1	20-1	R	0.72	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-1	18
19	SPARE		0.00		20 / 1	B						20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20-1	20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-2	22
23	SPARE		0.00		20 / 1	B						24
25	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-3	26
27	SPARE		0.00		20 / 1	B						28
29	LTG - SITE POLES	L	0.23	20-1	20 / 1	A	30 / 2	30.2N	C	4.50	MH SWING TANK - SWH-1*	30
31	SPACE ONLY					B						32
33	SPACE ONLY					A	20 / 1	20-1	N	0.36	CIRC PUMP "CP-1" & MIX VALVE MAV-1	34
35	SPACE ONLY					B	20 / 1	20-1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

		CONNECTED LOAD	DEMAND FACTOR	DEMAND LOAD	
L	= LIGHTING	0.74	kVA 125%	0.93	kVA
R	= RECEPTACLES	4.14	kVA NEC 220.44	4.14	kVA
M	= MOTORS	0.24	kVA 100%	0.24	kVA
	PLUS 25% OF LARGEST MOTOR	0.24	kVA 25%	0.06	kVA
C	= CONTINUOUS	11.18	kVA 125%	13.98	kVA
N	= NON-CONTINUOUS	1.44	kVA 100%	1.44	kVA
K	= KITCHEN	0.00	kVA 75%	0.00	kVA

PANEL CONNECTED TOTAL: 17.74 kVA — 73.93 AMPS
PANEL DEMAND TOTAL: 20.79 kVA — 86.60 AMPS

NOTES:
A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER.

LOAD CENTER - 2 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O OR M.C.B.: M.L.O — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20-1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN LTG, RECEPTS, SD (1)	20-1	20 / 1	B			-	4
5	RECEPTS, ERV, MEDIA PNL (1)	20-1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20-1	20 / 1	B			-	8
9	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	A	20 / 3	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	B			-	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20-1	20 / 1	B			-	16
17	DED RECEPT - AC UNIT (BY TENANT)	20-1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO 5mA CFCI COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

LOAD CENTER - 3 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O OR M.C.B.: M.L.O — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20-1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN LTG, RECEPTS, SD (1)	20-1	20 / 1	B			-	4
5	RECEPTS, ERV, MEDIA PNL (1)	20-1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20-1	20 / 1	B			-	8
9	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	A	20 / 3	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	B			-	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20-1	20 / 1	B			-	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
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MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS VOLTAGE/ PH	KW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-3	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-1	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.163					2
			/						
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/9/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS; CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES. DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	240 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3

NOTES:
1. CONFIRM EXACT LOCATION WITH ARCHITECT.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 12 UNIT STACKED FLATS

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES BED 1	BED 2	BED 3	LIVING
A	2-BDRM	CH-0.84	CH-0.7		CH-1.8
B	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
C	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
D	2-BDRM	CH-0.84	CH-0.7		CH-1.8
E	2-BDRM	CH-0.56	CH-0.56		CH-0.93
F	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
G	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
H	2-BDRM	CH-0.56	CH-0.56		CH-0.93
I	2-BDRM	CH-0.7	CH-0.56		CH-1.12
J	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
K	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
L	2-BDRM	CH-0.7	CH-0.56		CH-1.12

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.

B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 14

BID SET

VIRGINNA M. [illegible] — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

REVISIONS / NOTES

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/630 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE
& SPECS FOR ALL 'S' LIGHTING FIXTURES.

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

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General Partner
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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 14

BID SET

GEORGINNA M. JACKSON
STATE OF WASHINGTON
43761
REGISTERED
PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

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TITLE

LUMINAIRE SCHEDULE

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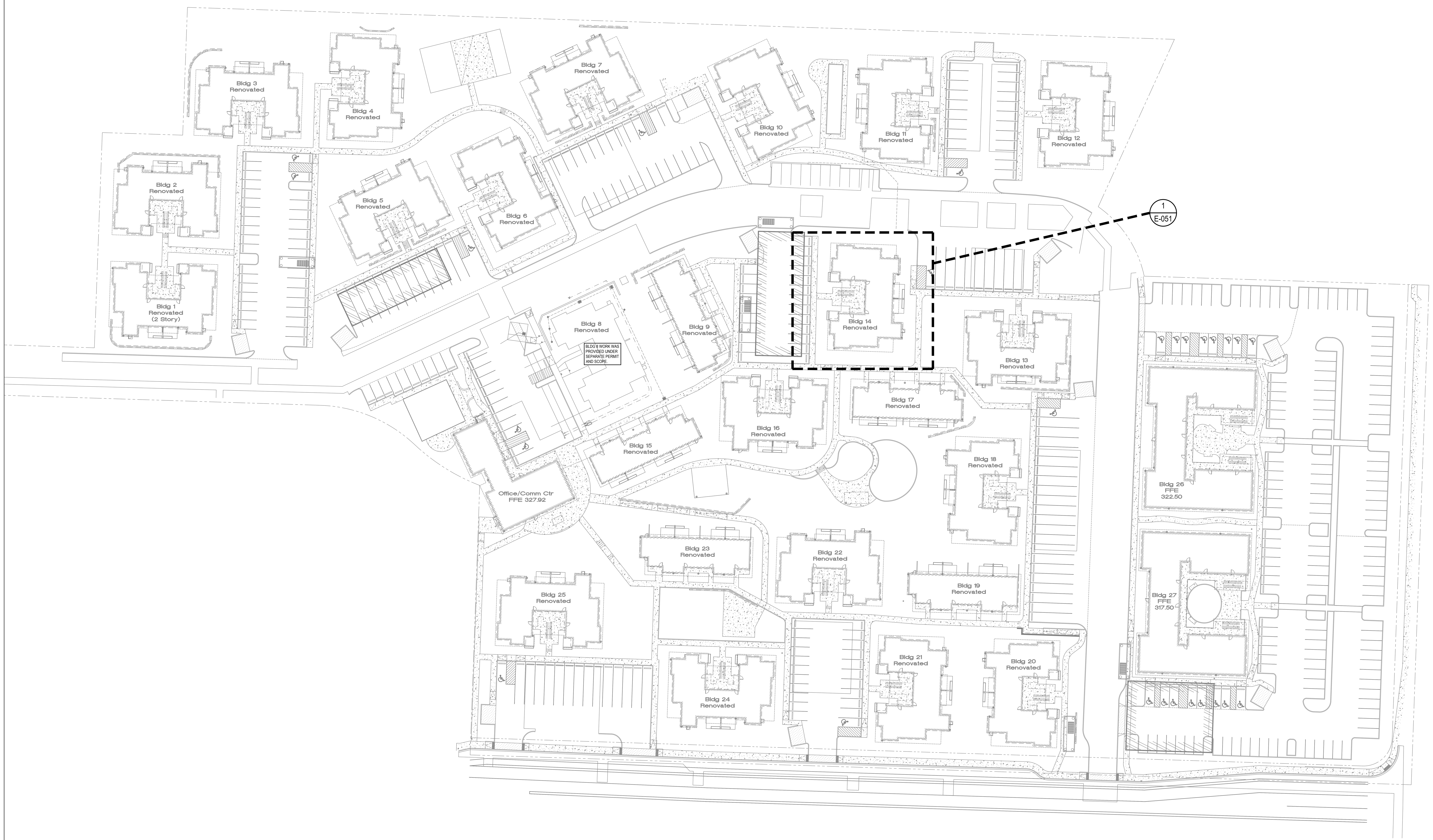

OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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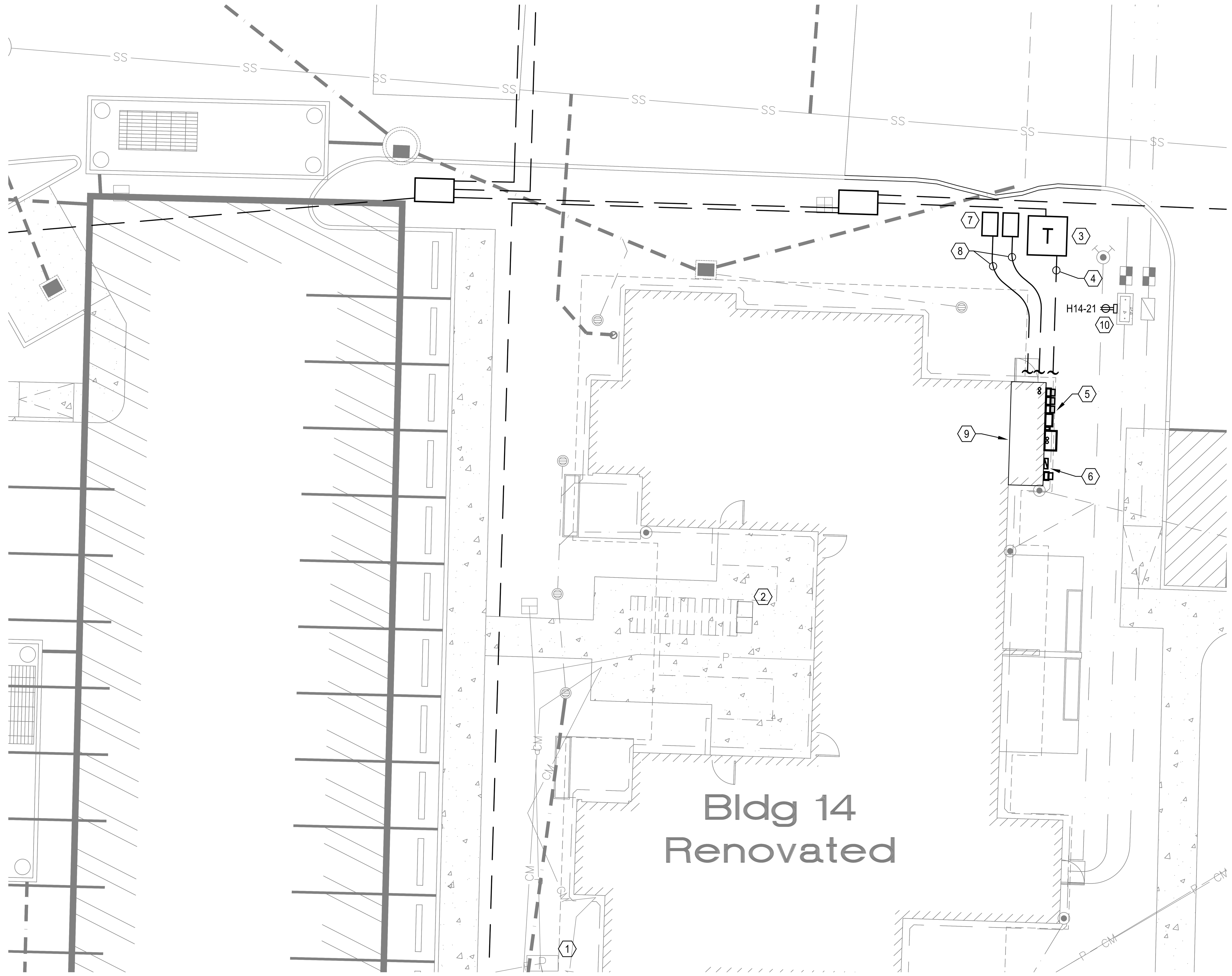
ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.



ELECTRICAL SITE PLAN - BUILDING 14

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

FLAG NOTES ⟨X⟩:

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
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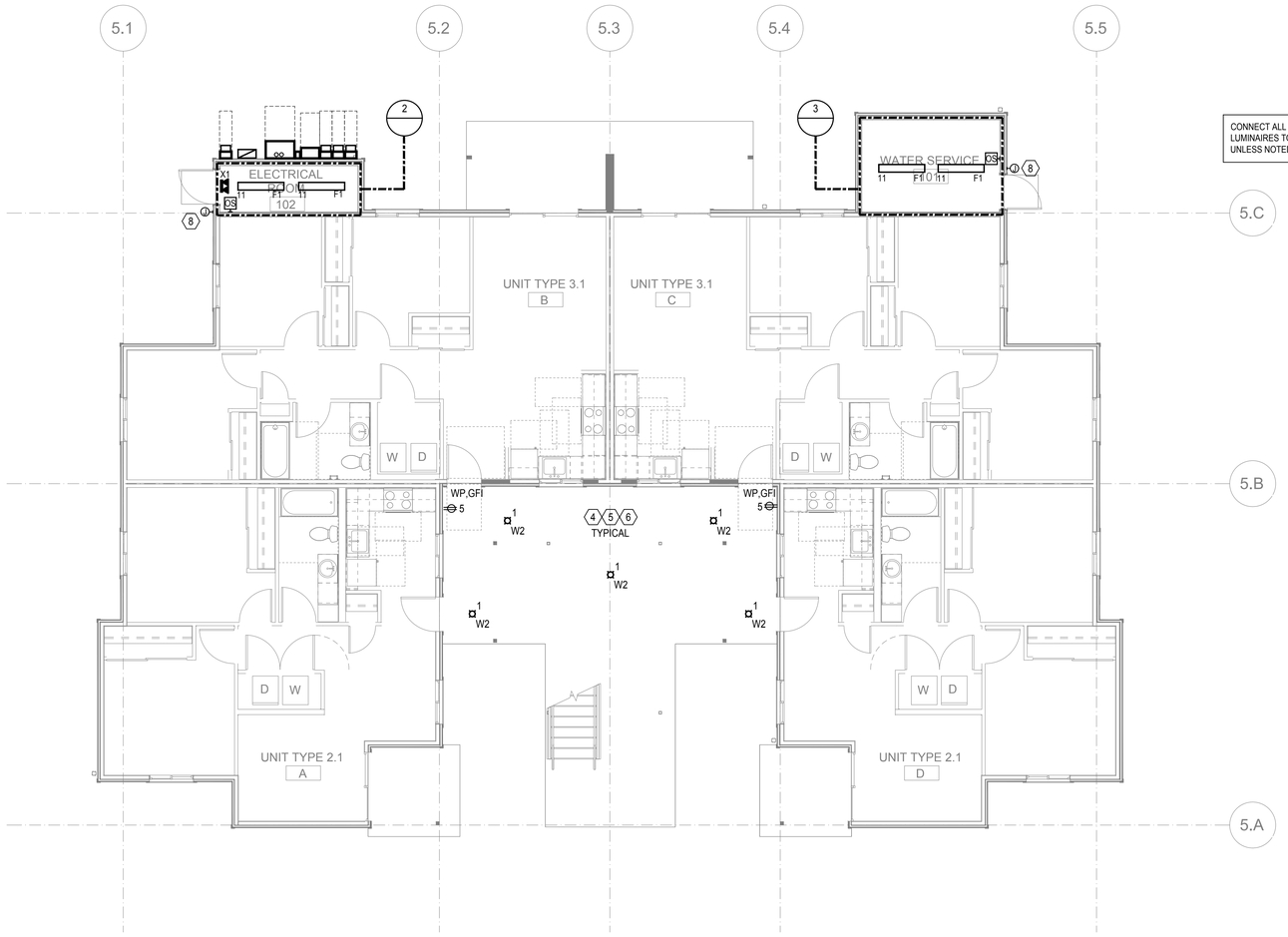


CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H14 UNLESS NOTED OTHERWISE.

POWER AND LIGHTING PLAN - BUILDING 14 - LEVEL 1

SCALE: 3/16"=1'-0"

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

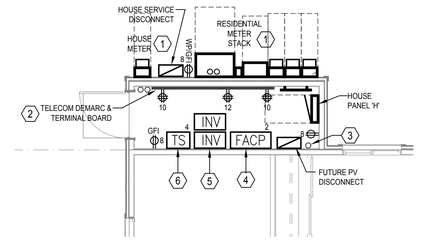
B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

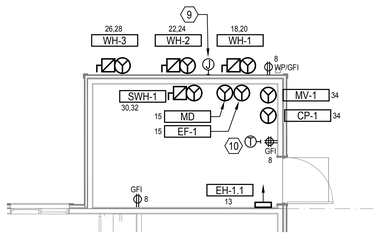
D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.
2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-375-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.
7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.
8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.
10. CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



2 E-101 **ELECTRICAL ROOM**
1/4"=1'-0"



3 E-101 **WATER ROOM**
1/4"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 14

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 14 - LEVEL 1

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
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SHEET NO.:	

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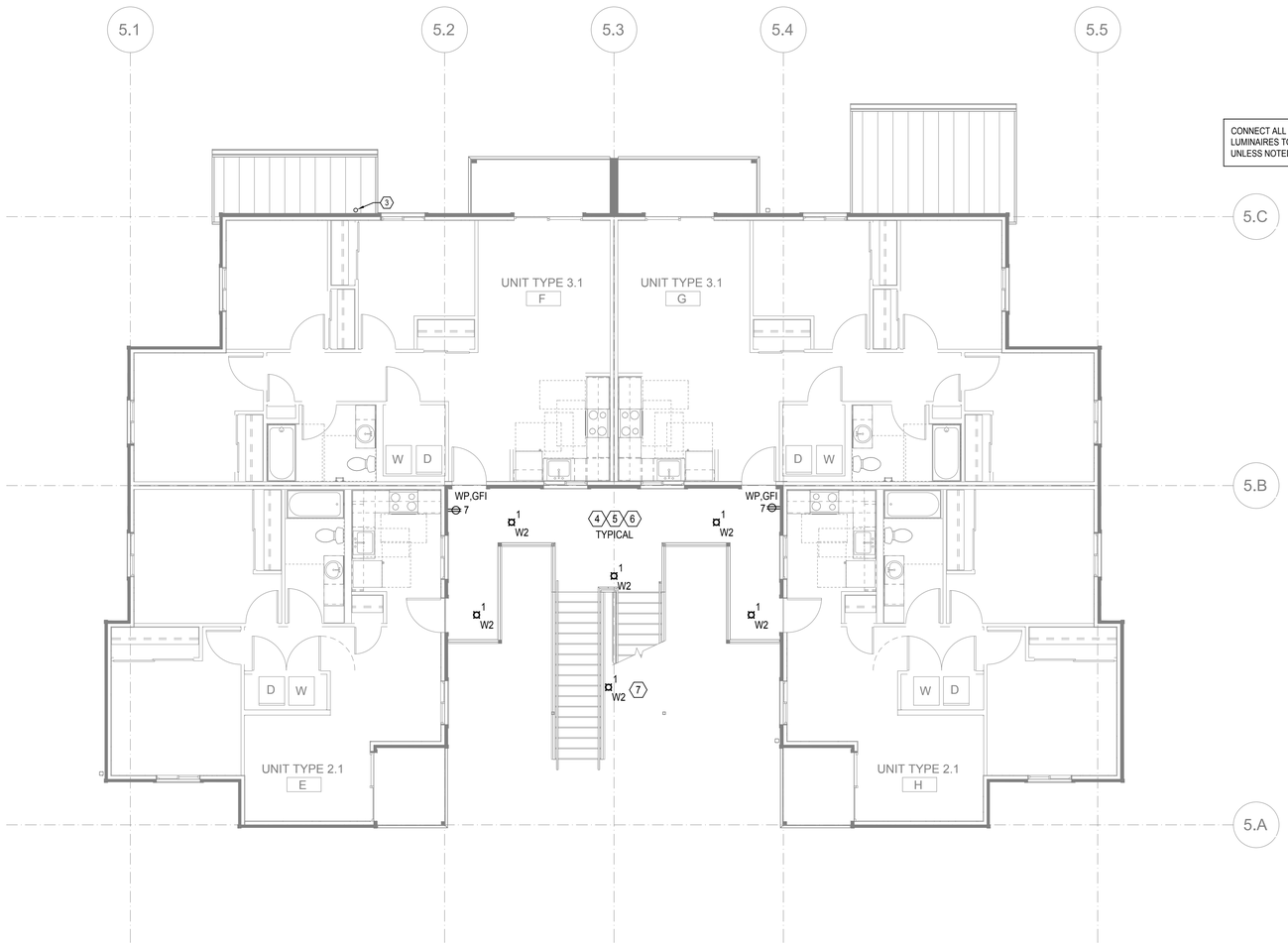

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H14 UNLESS NOTED OTHERWISE.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM. TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-375-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.
7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.

POWER AND LIGHTING PLAN - BUILDING 14 - LEVEL 2

SCALE: 3/16"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 14

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

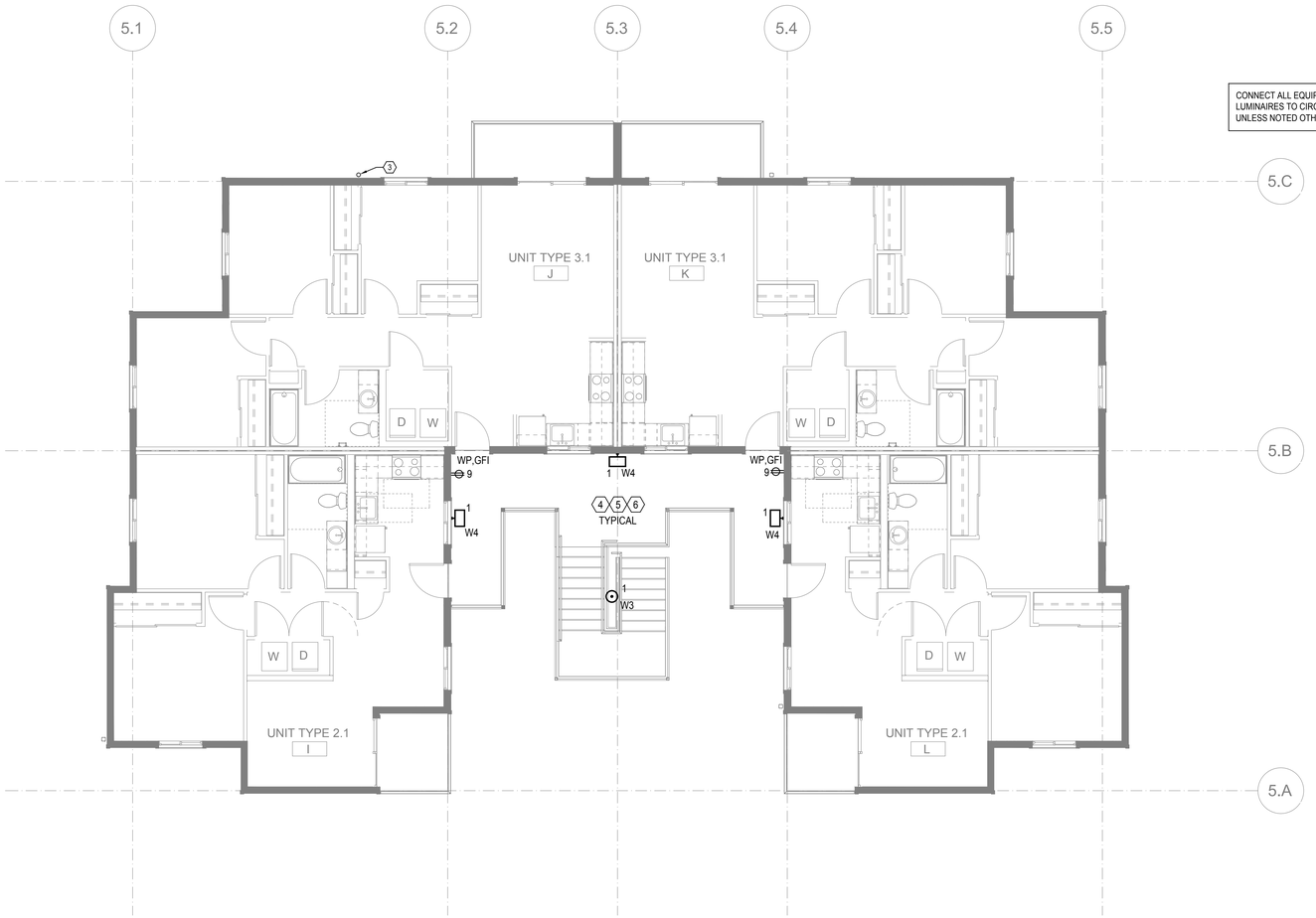
TITLE

POWER AND LIGHTING PLAN - BUILDING 14 - LEVEL 2

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E14-102

10/7/2021 7:33:34 AM



CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H14 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

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POWER AND LIGHTING PLAN - BUILDING 14 - LEVEL 3

SCALE: 3/16"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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SMR Architects
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King County Housing Authority

New Kirkland Heights LLLP
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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 14

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 14 - LEVEL 3

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E14-103

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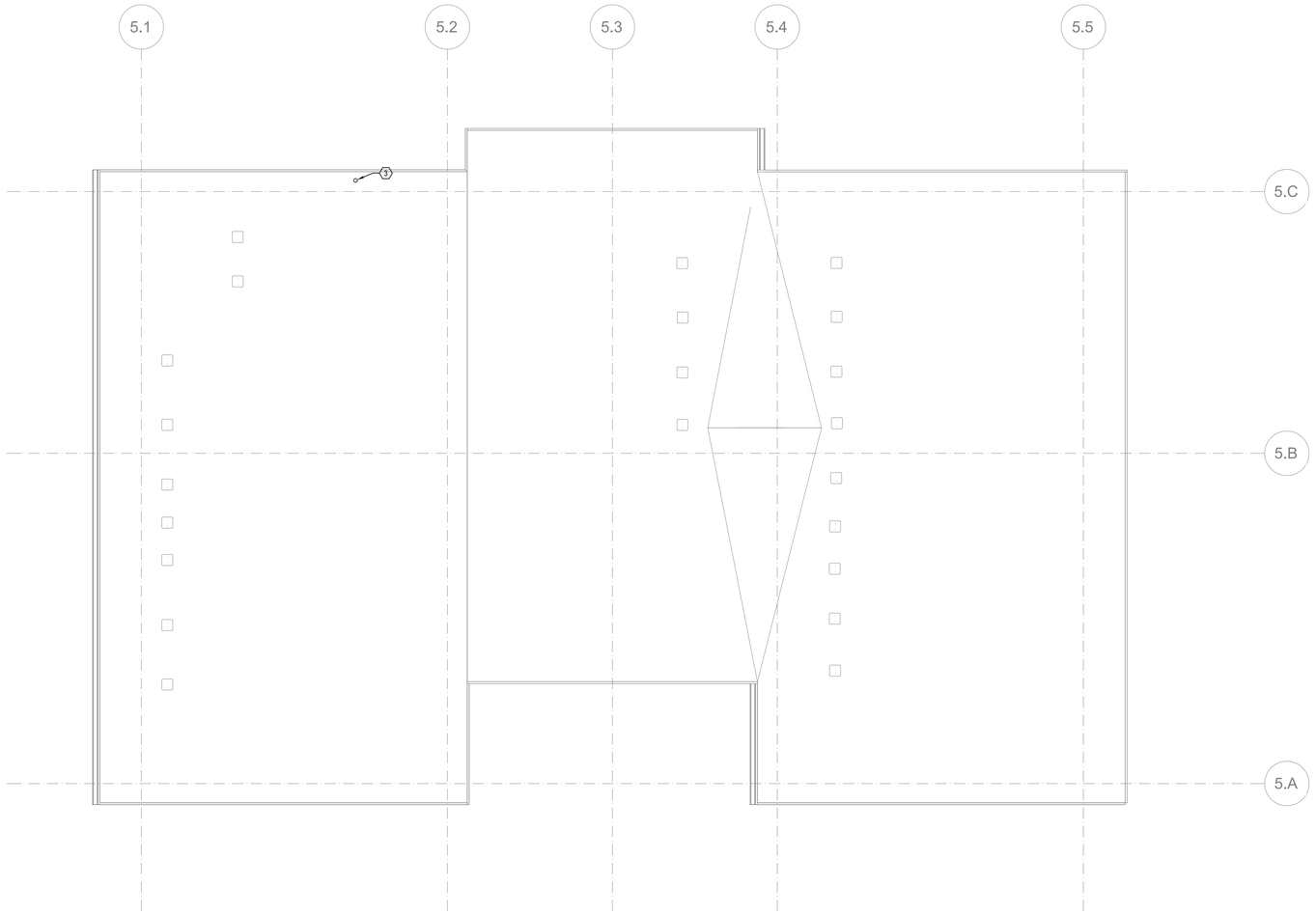

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

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POWER PLAN - BUILDING 14 - ROOF

SCALE: 3/16"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 14

BID SET

GEORGINNA M. LAMSON
STATE OF WASHINGTON
43761
REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER PLAN - BUILDING 14 - ROOF

PERMIT #	
DRAWN	RA, JF
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ISSUE DATE	4/14/2023
JOB NO.	22016

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FEEDER/ CIRCUIT SCHEDULE

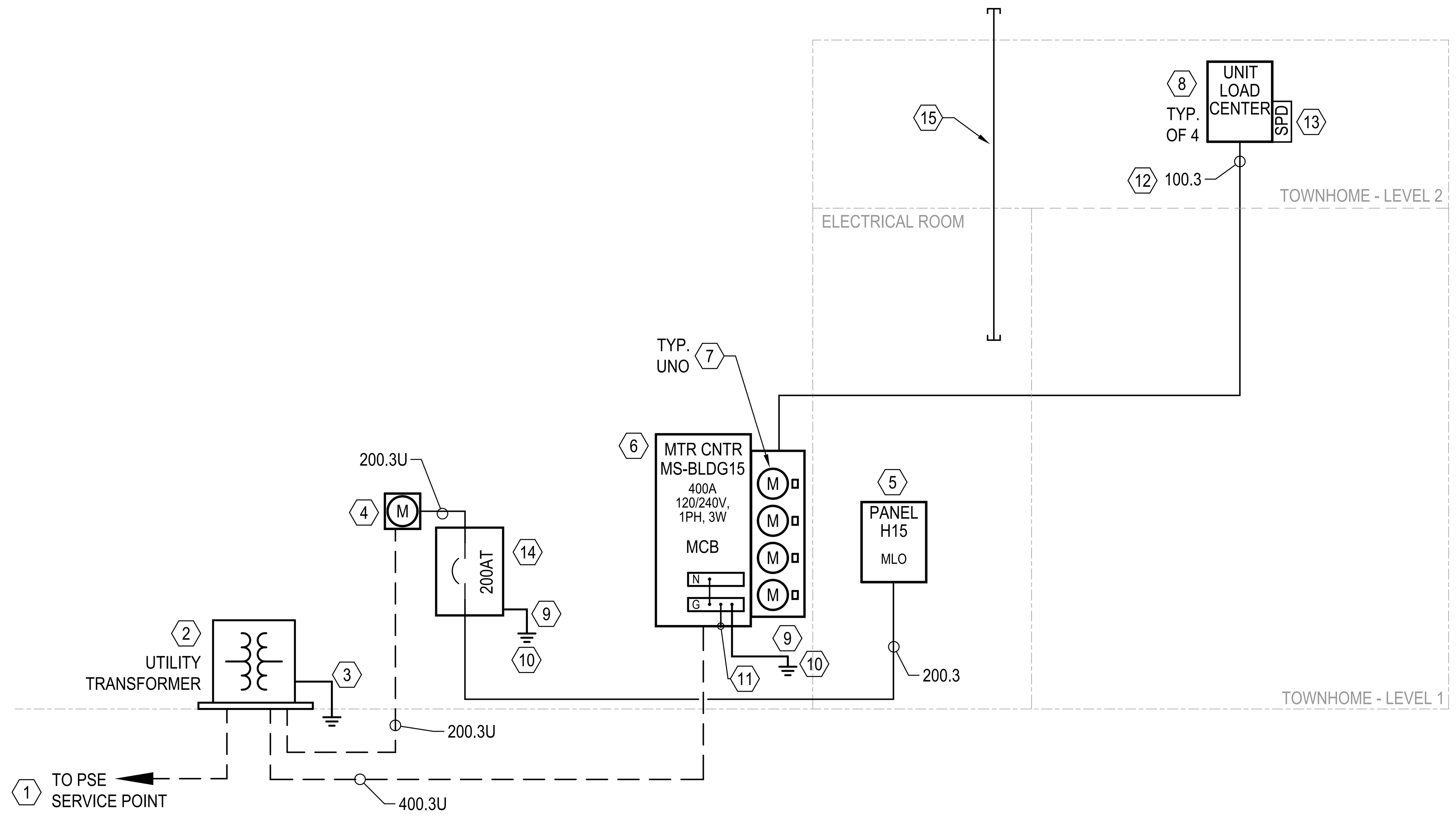
MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	CONDUCTORS PER SET: PHASE / NEUTRAL (N) (QTY) SIZE	CONDUCTORS PER SET: GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE:NTS

FLAG NOTES (X):

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (4) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 15

UNIT TYPE: TOWNHOUSE UNIT **AREA (SF):** 1,211 — 4/6/2023
DEMAND LOAD (kVA): 18.81 => 78.4 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =		AREA x 3VA/SF	=	3.63	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	8.13	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:		100%	=	3.00	kVA
3,001VA - 120,000VA:		35%	=	1.80	kVA
> 120,000VA:		25%	=	0.00	kVA
GENERAL LIGHTING LOAD - DEMAND			**=**	**4.80**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)			
REFRIGERATOR	1	AT	0.7	=	0.70	kVA
RANGE HOOD	1	AT	0.3	=	0.30	kVA
MICROWAVE		AT		=	0.00	kVA
DISHWASHER	1	AT	1.2	=	1.20	kVA
WASHER	1	AT	1.2	=	1.20	kVA
GARBAGE DISPOSAL		AT		=	0.00	kVA
WATER HEATER		AT		=	0.00	kVA
			SUBTOTAL (CONNECTED)	=	3.40	kVA
APPLIANCE DEMAND FACTOR [220.53]:			75%			
GENERAL APPLIANCE LOAD - DEMAND				**=**	**2.55**	**kVA**

MOTORS [220.50]:

	QTY		LOAD (kVA EACH)			
TOILET EXHAUST FAN		AT		=	0.00	kVA
ERV UNIT	1	AT	0.11	=	0.11	kVA
KITCHEN EXHAUST FAN		AT		=	0.00	kVA
+25% OF LARGEST MOTOR				=	0.03	kVA
GENERAL MOTOR LOAD - DEMAND				**=**	**0.14**	**kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51] = 6.06 kVA

	QTY		LOAD (kVA EACH)			
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50	kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00	kVA
ELECTRIC OVEN [220.55]		AT		=	0.00	kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00	kVA

TOTAL DWELLING UNIT LOAD PER NEC 220, PART III = 27.04 kVA

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	25.97	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	6.39	kVA

ELECTRIC HEAT AND AC [220.82(C)]:

LARGEST LOAD OF OPTIONS: > = 4 ELECT SPACE HEATERS; 40% NAMEPLATE = 2.42 kVA

TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV = 18.81 kVA

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL — MS- 4 unit TOWNHOUSE — 4/6/2023

DEMAND LOAD (kVA): 57.61 => 240.0 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING 1.5< X < 3.5kW QTY	COOKING 1.5< X < 3.5kW LOAD (kVA)	COOKING 3.5kW < X < 8.75kW QTY	COOKING 3.5kW < X < 8.75kW LOAD (kVA)	COOKING 8.75kW < X < 12kW QTY	COOKING 8.75kW < X < 12kW LOAD (kVA)
0								0	0.00	0	0.00	0	0.00
TOWNHOUSE UNIT	4	32.53	13.60	0.44	24.22	4	22.00	0	0.00	0	0.00	4	35.20
0								0	0.00	0	0.00	0	0.00
TOTALS:	4	32.53	13.60	0.44	24.22	4	22.00	0	0.00	0	0.00	4	35.20
	ADDITIONAL 25% OF LARGEST MOTOR:			0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD = 128.02 kVA
DEMAND FACTOR FROM TABLE 220.84 = 45%

TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC = 57.61 kVA

KIRKLAND HEIGHTS - TOWNHOUSE BLDG (REHAB)

PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 4): 57.61 kVA
(SEE ATTACHED CALCS)
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.

RESIDENTIAL TOTAL: 57.61 kVA
240.04 AMPS @ 120/240V, 1-PHASE
PROVIDE 400A RESIDENTIAL METER CENTER

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):

LIGHTING - Breezeway +Interior:	0.5 kVA
LIGHTING - SITE:	1.0 kVA
GENERAL RECEPTACLES:	1.0 kVA
MECHANICAL:	kVA
ELECT HEAT (WATER RMS):	1.0 KVA
CENTRAL HOT WATER (HPWH)	5.3 KVA
ELECT SWING TANK	4.5 KVA
HEAT TRACE	0.5 kVA
MISCELLANEOUS:	2.0 kVA
EV CHARGING (2):	16.64 kVA

HOUSE TOTAL: 32.41 kVA
89.96 AMPS @ 120/240V, 1-PHASE
WITH 25% SPARE CAPACITY 40.51 kVA
112.4556 AMPS @ 120/240V, 1-PHASE
PROVIDE 200A HOUSE SERVICE

TOTAL BUILDING SERVICE: 98.12 kVA
272.36 AMPS @ 120/240V, 1-PHASE

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS
13317 NE 133rd St., Kirkland, WA 98034

BUILDING 15
BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE
SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E15-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	CONDUCTORS PER SET: PHASE / NEUTRAL (N) (QTY) SIZE	CONDUCTORS PER SET: GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION);
CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED: #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.

B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H15

FED FROM: XFR — LOCATION: ELECTRICAL ROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
AIC: SEE SINGLE-LINE DIAGRAM — BUS RATING: 200 AMPS — MLO OR MCB: MLO 200 AMPS

CKT #	DESCRIPTION	CONN LOAD TYPE	CONN LOAD kVA	CKT TAG	CB AMPS/#P	PH	CB AMPS/#P	CKT TAG	CONN LOAD TYPE	CONN LOAD kVA	DESCRIPTION	CKT #
1	LTG - ELECT / MECH CLOSETS	L	0.12	20.1	20 / 1	A	20 / 1	20.1	N	0.60	FIRE ALARM CONTROL PANEL	2
3	ELECT HEATER - FIRE SPRINKLER	C	1.50	20.1	20 / 1	B	20 / 1			0.00	SPARE	4
5	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.12	20.1	20 / 1	A	20 / 1			0.00	SPARE	6
7	SPARE		0.00		20 / 1	B	20 / 1	20.1	R	0.54	RECEPTS - ELECT RM	8
9	SPARE		0.00		20 / 1	A	20 / 1	20.1	R	0.36	RECEPTS - TELECOM	10
11	SPARE		0.00		20 / 1	B	20 / 1	20.1	R	0.36	RECEPTS - TELECOM	12
13	SPARE		0.00		20 / 1	A	20 / 1			0.00	SPARE	14
15	SPARE		0.00		20 / 1	B	20 / 1	20.1	R	0.54	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - 'WH-1'	18
19	SPARE		0.00		20 / 1	B					"	20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20.1	20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - 'WH-2'	22
23	SPARE		0.00		20 / 1	B					"	24
25	SPARE		0.00		20 / 1	A	20 / 1			0.00	SPARE	26
27	SPARE		0.00		20 / 1	B	20 / 1			0.00	SPARE	28
29	SPACE ONLY					A	30 / 2	30.2	C	4.50	WH SWING TANK - 'SWH-1'	30
31	SPACE ONLY					B					"	32
33	SPACE ONLY					A	20 / 1	20.1	N	0.36	CIRC PUMP 'CP-1' & MIX VALVE 'MV-1'	34
35	SPACE ONLY					B	20 / 1	20.1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

	CONNECTED LOAD	DEMAND FACTOR	DEMAND LOAD
L = LIGHTING	0.12 kVA	125%	0.15 kVA
R = RECEPTACLES	2.52 kVA	NEC 220.44	2.52 kVA
M = MOTORS	0.12 kVA	100%	0.12 kVA
PLUS 25% OF LARGEST MOTOR	0.12 kVA	25%	0.03 kVA
C = CONTINUOUS	9.46 kVA	125%	11.82 kVA
N = NON-CONTINUOUS	1.20 kVA	100%	1.20 kVA
K = KITCHEN	0.00 kVA	75%	0.00 kVA

PANEL CONNECTED TOTAL: 13.42 kVA, 55.90 AMPS

PANEL DEMAND TOTAL: 15.84 kVA, 66.00 AMPS

NOTES:

A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):

1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER.

LOAD CENTER - 4 BEDROOM

FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
AIC: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — MLO OR MCB: MLO 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/#P	PH	CB AMPS/#P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN LTG, RECEPTS, SD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ERV, MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19	BEDROOM 4 RECEPTS, LTS, SD (1)	20.1	20 / 1	B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A	20 / 1	20.1	HEAT - KITCHEN, BATH (1)	22
23	"			B				24

NOTES:

A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.

B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):

1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS: VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-2	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.135					2
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS; CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES; DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM. COORDINATE EXACT REQUIRMEMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EWH-T	DWELLING UNITS	KING	PAW WALL HEATER	0.25	120 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	120 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 5

NOTES:

1. CONFIRM EXACT LOCATION WITH ARCHITECT.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 4 UNIT TOWNHOMES

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES: BED 1	BED 2	BED 3	BED 4	KITCHEN	BATH	LIVING
A	4-BDRM	CH-0.93	CH-0.56	CH-0.56	CH-0.93	EWH-T	EWH-T	CH-1.4
B	4-BDRM	CH-0.7	CH-0.7	CH-0.7	CH-0.7	EWH-T	EWH-T	CH-1.12
C	4-BDRM	CH-0.7	CH-0.7	CH-0.7	CH-0.7	EWH-T	EWH-T	CH-1.12
D	4-BDRM	CH-0.93	CH-0.56	CH-0.56	CH-0.93	EWH-T	EWH-T	CH-1.4

NOTES:

A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.

B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS
13317 NE 133rd St., Kirkland, WA 98034

BUILDING 15
BID SET

GEORGINNA M. LUCAS — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

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TITLE
SCHEDULES

PERMIT #	
DRAWN	RA, JF
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ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	E15-004

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED. MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/830 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:
1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE & SPECS FOR ALL 'S' LIGHTING FIXTURES.

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

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c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS
13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 15
BID SET

GEORGINNA M. LAYSON
STATE OF WASHINGTON
43761
REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE
LUMINAIRE SCHEDULE

PERMIT #	
DRAWN	RA, JF
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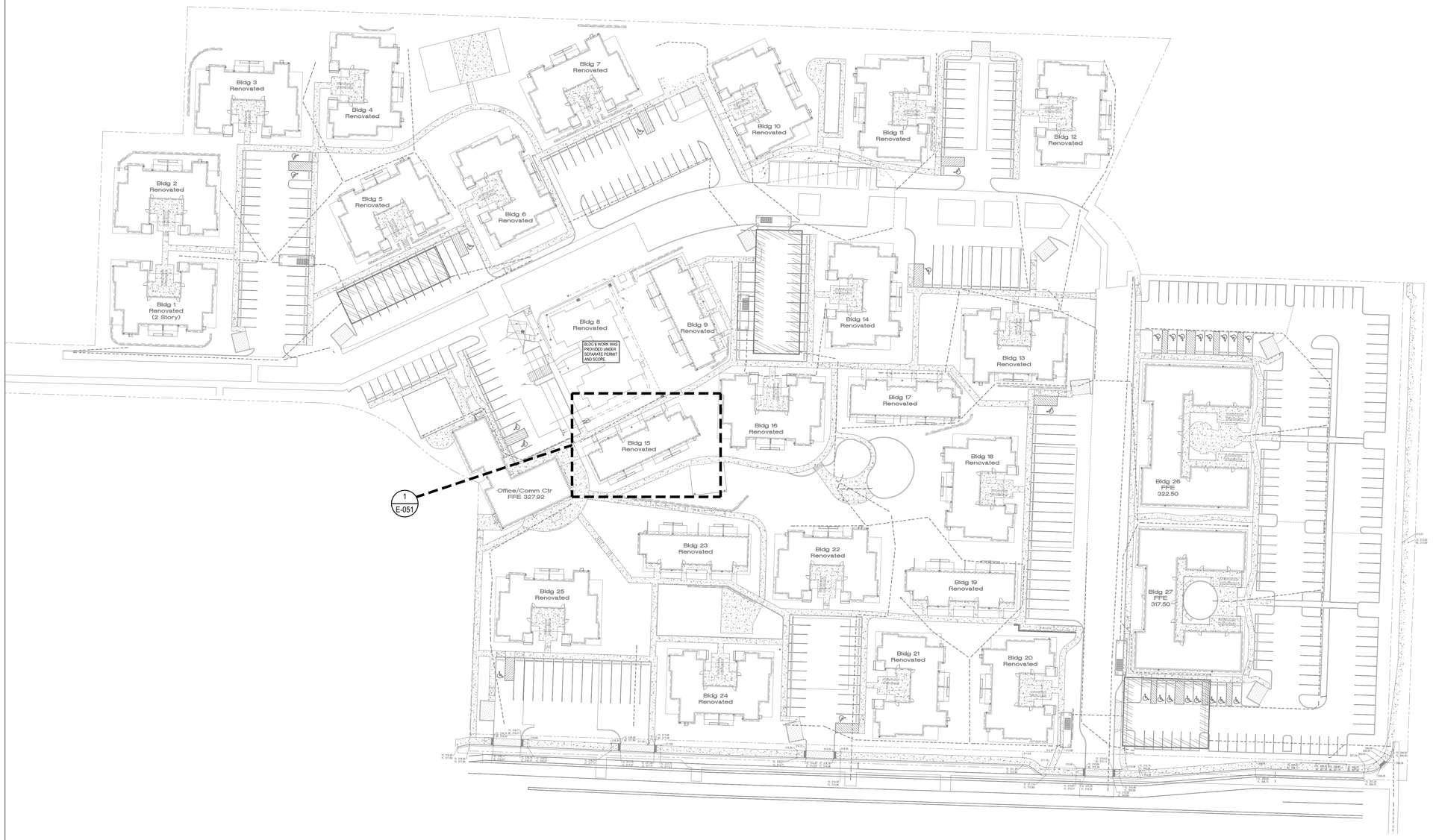
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E15-005



OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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KIRKLAND HEIGHTS APARTMENTS

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BUILDING 15

BID SET

PROGINNA M. ALLEN — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

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OVERALL PROJECT SITE PLAN

PERMIT #	
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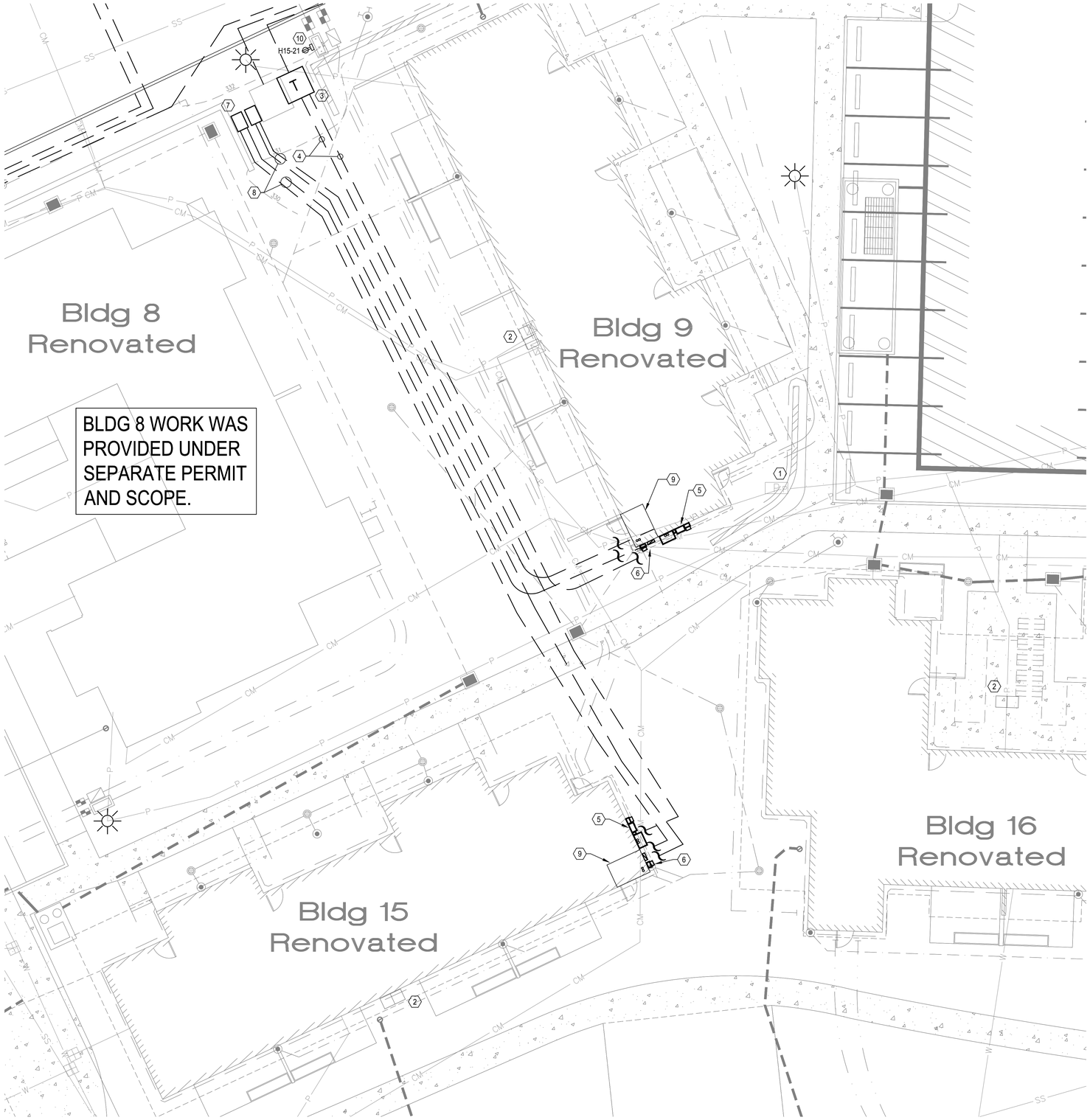

ELECTRICAL SITE PLAN - BUILDING 15

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

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

FLAG NOTES (X):

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

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KIRKLAND HEIGHTS APARTMENTS

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Kirkland, WA 98034

BUILDING 15

BID SET

GEORGINNA M. LEE — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

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ELECTRICAL SITE PLAN - BUILDING 15

PERMIT #	
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ISSUE DATE	4/14/2023
JOB NO.	22016
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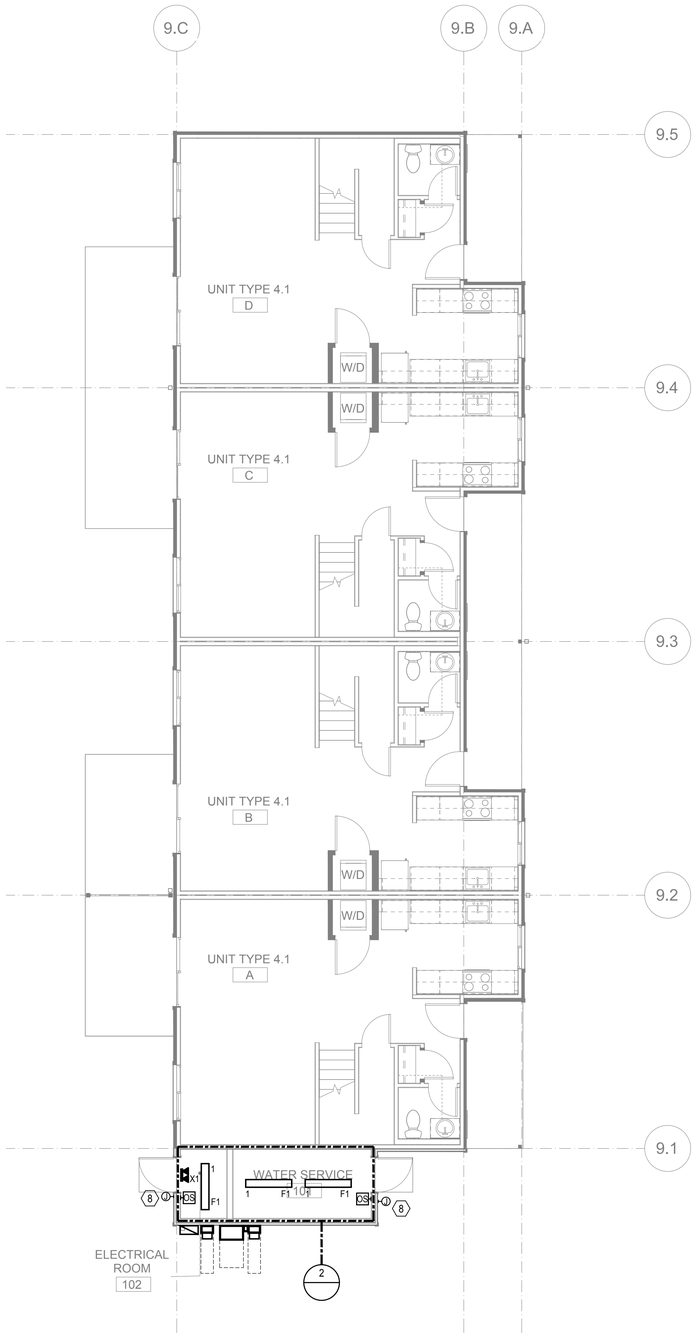
E15-051

10/7/2021 7:33:34 AM



CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H15 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

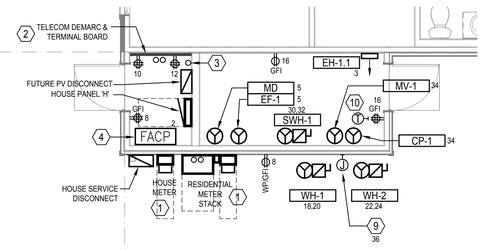
B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.
2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. NOT USED
6. NOT USED.
7. NOT USED.
8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.
10. ELECTRICAL CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



ELECTRICAL AND WATER ROOM

2 / E-101 — 1/4"=1'-0"

POWER AND LIGHTING PLAN - BUILDING 15 - LEVEL 1

SCALE: 3/16"=1'-0"

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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King County Housing Authority

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13310 NE 133rd St.
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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 15

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 15 - LEVEL 1

PERMIT #	
DRAWN	RA, JF
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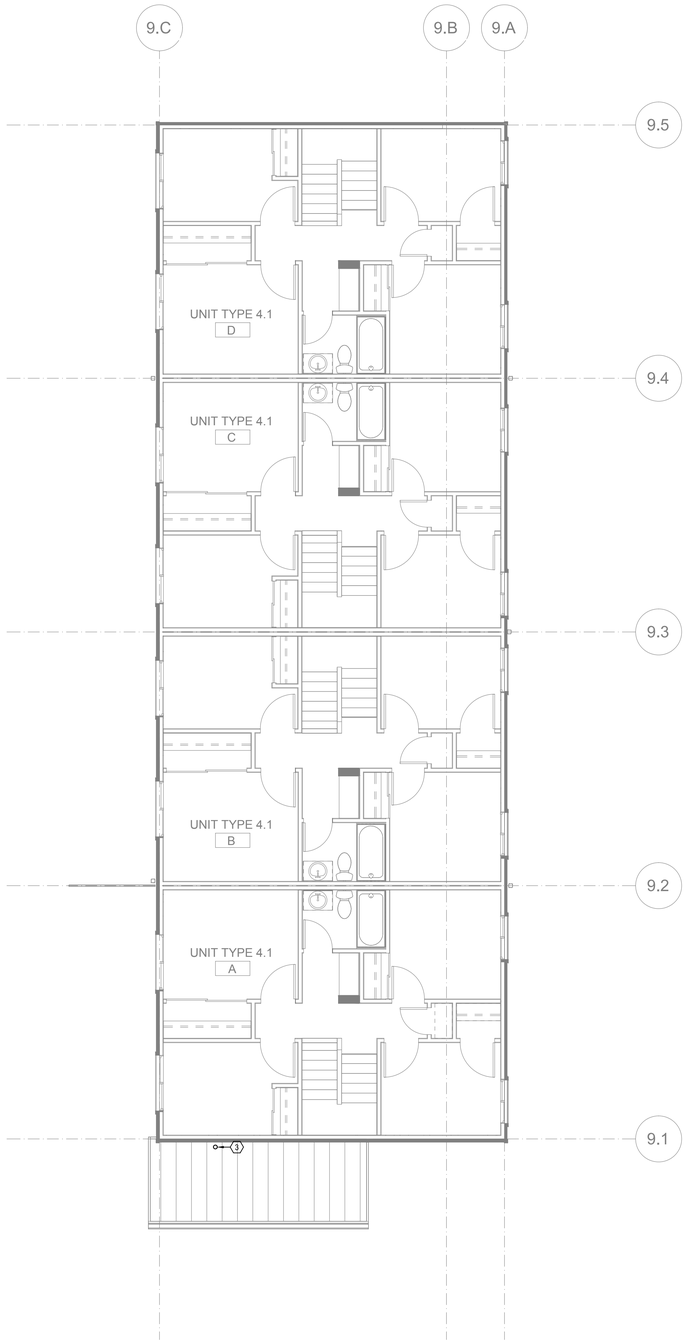
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E15-101



CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H15 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

POWER AND LIGHTING PLAN - BUILDING 15 - LEVEL 2

SCALE: 3/16"=1'-0"

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192 Nickerson, Suite #300
Seattle, Washington 98109
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BUILDING 15

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 15 - LEVEL 2

PERMIT #	
DRAWN	RA, JF
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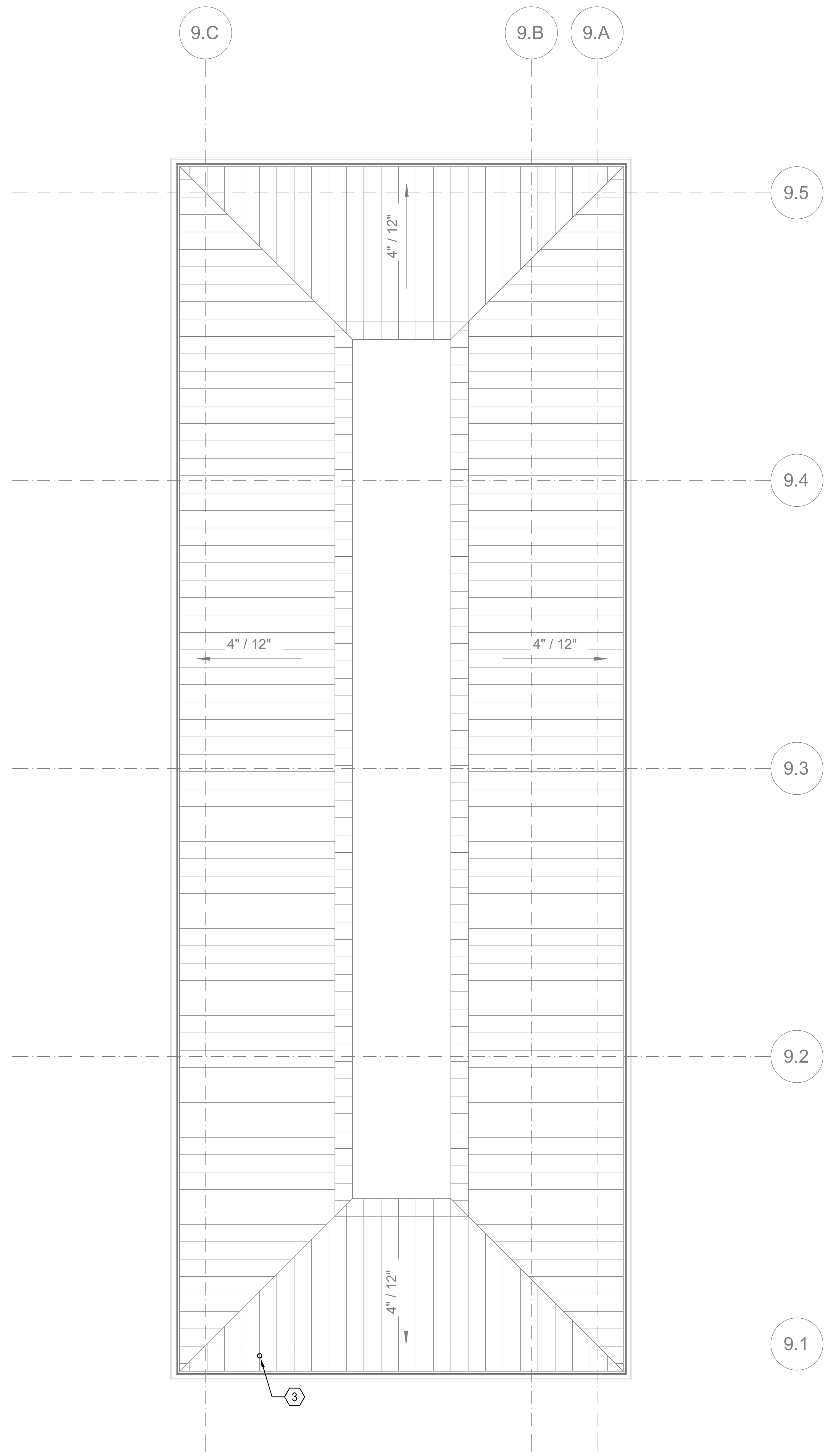
ISSUE DATE	4/14/2023
JOB NO.	22016

SHEET NO.:

E15-102



POWER PLAN - BUILDING 15 - ROOF

SCALE: 3/16"=1'-0"

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES ⟨X⟩:

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

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E15-103

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FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	CONDUCTORS PER SET: PHASE / NEUTRAL (N) (QTY) SIZE	CONDUCTORS PER SET: GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

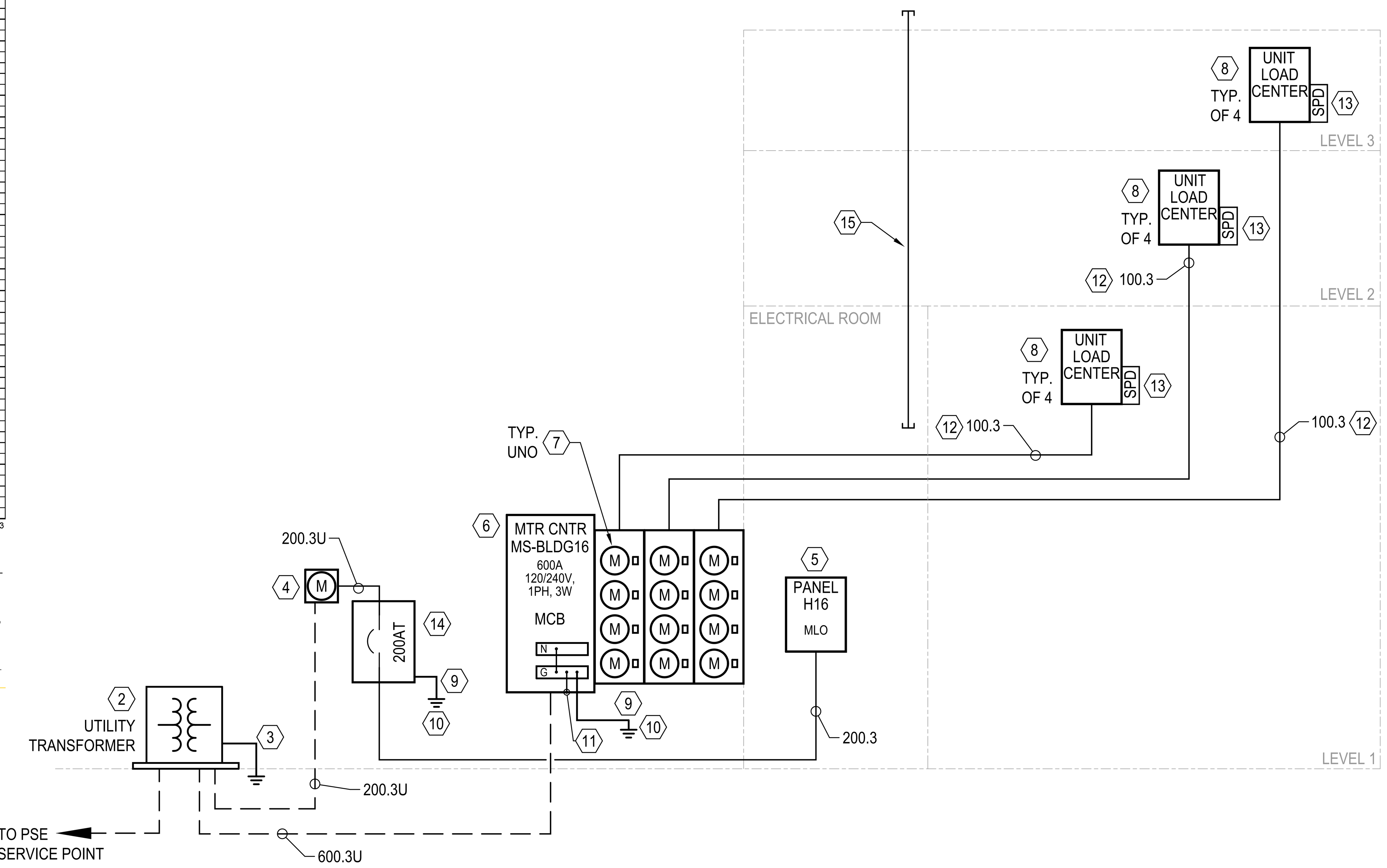
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE:NTS

FLAG NOTES (X):

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (12) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 16

UNIT TYPE: 2BR - 2.1

UNIT TYPE: 2BR - 2.1	AREA (SF): 782					4/6/2023
DEMAND LOAD (kVA): 17.93 =>	74.7 AMPS AT	240 V	1 PH			
DWELLING UNIT CALCULATIONS: NEC 220, PART III:						
GENERAL LIGHTING LOADS [220.12] =			AREA x 3VA/SF	=	2.35	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2		CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1		CKTS x 1500VA	=	1.50	kVA
			SUBTOTAL (CONNECTED)	=	6.85	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:						
0 - 3,000VA:			100%	=	3.00	kVA
3,001VA - 120,000VA:			35%	=	1.35	kVA
> 120,000VA:			25%	=	0.00	kVA
			GENERAL LIGHTING LOAD - DEMAND	=	**4.35**	**kVA**
FIXED IN PLACE APPLIANCES [220.53]: TYPE	QTY		LOAD (kVA EACH)			
REFRIGERATOR	1	AT	0.7	=	0.70	kVA
RANGE HOOD	1	AT	0.3	=	0.30	kVA
MICROWAVE		AT		=	0.00	kVA
DISHWASHER		AT		=	0.00	kVA
WASHER	1	AT	1.2	=	1.20	kVA
GARBAGE DISPOSAL		AT		=	0.00	kVA
WATER HEATER		AT		=	0.00	kVA
			SUBTOTAL (CONNECTED)	=	2.20	kVA
APPLIANCE DEMAND FACTOR [220.53]:			75%			
			GENERAL APPLIANCE LOAD - DEMAND	=	**1.65**	**kVA**
MOTORS [220.50]:	QTY		LOAD (kVA EACH)			
TOILET EXHAUST FAN		AT		=	0.00	kVA
ERV UNIT	1	AT	0.11	=	0.11	kVA
KITCHEN EXHAUST FAN		AT		=	0.00	kVA
+25% OF LARGEST MOTOR				=	0.03	kVA
			GENERAL MOTOR LOAD - DEMAND	=	**0.14**	**kVA**
100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	3.91	kVA
	QTY		LOAD (kVA EACH)			
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50	kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00	kVA
ELECTRIC OVEN [220.55]		AT		=	0.00	kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00	kVA
			TOTAL DWELLING UNIT LOAD PER NEC 220, PART III	=	**23.54**	**kVA**
DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:						
			TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]	=	23.48	kVA
DEMAND FACTORS PER NEC 220.82(B):						
0 - 10kVA:			100%	=	10.00	kVA
> 10 kVA:			40%	=	5.39	kVA
ELECTRIC HEAT AND AC [220.82(C)]:						
LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS; 65% NAMEPLATE			=	2.54	kVA
			TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	**17.93**	**kVA**

UNIT TYPE: 3BR - 3.1

UNIT TYPE: 3BR - 3.1	AREA (SF): 906					4/6/2023
DEMAND LOAD (kVA): 18.49 =>	77.0 AMPS AT	240 V	1 PH			
DWELLING UNIT CALCULATIONS: NEC 220, PART III:						
GENERAL LIGHTING LOADS [220.12] =			AREA x 3VA/SF	=	2.72	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2		CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1		CKTS x 1500VA	=	1.50	kVA
			SUBTOTAL (CONNECTED)	=	7.22	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:						
0 - 3,000VA:			100%	=	3.00	kVA
3,001VA - 120,000VA:			35%	=	1.48	kVA
> 120,000VA:			25%	=	0.00	kVA
			GENERAL LIGHTING LOAD - DEMAND	=	**4.48**	**kVA**
FIXED IN PLACE APPLIANCES [220.53]: TYPE	QTY		LOAD (kVA EACH)			
REFRIGERATOR	1	AT	0.7	=	0.70	kVA
RANGE HOOD	1	AT	0.3	=	0.30	kVA
MICROWAVE		AT		=	0.00	kVA
DISHWASHER		AT		=	0.00	kVA
WASHER	1	AT	1.2	=	1.20	kVA
GARBAGE DISPOSAL		AT		=	0.00	kVA
WATER HEATER		AT		=	0.00	kVA
			SUBTOTAL (CONNECTED)	=	2.20	kVA
APPLIANCE DEMAND FACTOR [220.53]:			75%			
			GENERAL APPLIANCE LOAD - DEMAND	=	**1.65**	**kVA**
MOTORS [220.50]:	QTY		LOAD (kVA EACH)			
TOILET EXHAUST FAN		AT		=	0.00	kVA
ERV UNIT	1	AT	0.11	=	0.11	kVA
KITCHEN EXHAUST FAN		AT		=	0.00	kVA
+25% OF LARGEST MOTOR				=	0.03	kVA
			GENERAL MOTOR LOAD - DEMAND	=	**0.14**	**kVA**
100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	4.53	kVA
	QTY		LOAD (kVA EACH)			
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50	kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00	kVA
ELECTRIC OVEN [220.55]		AT		=	0.00	kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00	kVA
			TOTAL DWELLING UNIT LOAD PER NEC 220, PART III	=	**24.29**	**kVA**
DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:						
			TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]	=	23.86	kVA
DEMAND FACTORS PER NEC 220.82(B):						
0 - 10kVA:			100%	=	10.00	kVA
> 10 kVA:			40%	=	5.54	kVA
ELECTRIC HEAT AND AC [220.82(C)]:						
LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS; 65% NAMEPLATE			=	2.94	kVA
			TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	**18.49**	**kVA**

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL — MS - 12 unit STACK

4/6/2023

DEMAND LOAD (kVA): 137.09 => 571.2 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING 1.5< X < 3.5kW QTY	COOKING 1.5< X < 3.5kW LOAD (kVA)	COOKING 3.5kW < X < 8.75kW QTY	COOKING 3.5kW < X < 8.75kW LOAD (kVA)	COOKING 8.75kW < X < 12kW QTY	COOKING 8.75kW < X < 12kW LOAD (kVA)
2BR - 2.1	6	41.08	13.20	0.66	23.46	6	33.00	0	0.00	0	0.00	6	52.80
3BR - 3.1	6	43.31	13.20	0.66	27.18	6	33.00	0	0.00	0	0.00	6	52.80
0								0	0.00	0	0.00	0	0.00
TOTALS:	12	84.38	26.40	1.32	50.64	12	66.00	0	0.00	0	0.00	12	105.60
ADDITIONAL 25% OF LARGEST MOTOR:				0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD = 334.37 kVA

DEMAND FACTOR FROM TABLE 220.84 = 41%

TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC = 137.09 kVA

KIRKLAND HEIGHTS - 12 UNIT STACK FLAT (REHAB)

PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 12):	137.09	kVA
(SEE ATTACHED CALCS)		
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.		
RESIDENTIAL TOTAL:	137.09	kVA
	571.22	AMPS @ 120/240V, 1-PHASE
	PROVIDE 600A RESIDENTIAL METER CENTER	

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):		
LIGHTING - Breezeway +Interior:	1.5	kVA
LIGHTING - SITE:	1.5	kVA
GENERAL RECEPTACLES:	4.0	kVA
MECHANICAL:	1.0	kVA
ELECT HEAT (WATER RMS):	1.0	KVA
CENTRAL HOT WATER (HPWH)	7.7	KVA
ELECT SWING TANK	4.5	KVA
HEAT TRACE	0.5	kVA
MISCELLANEOUS:	2.5	kVA
EV CHARGING (2):	16.6	kVA
HOUSE TOTAL:	40.83	kVA
	170.14	AMPS @ 120/240V, 1-PHASE
WITH 25% SPARE CAPACITY	51.04	kVA
	212.6708	AMPS @ 120/240V, 1-PHASE
	PROVIDE 200A HOUSE SERVICE	
TOTAL BUILDING SERVICE:	188.13	kVA
	783.89	AMPS @ 120/240V, 1-PHASE

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St., Kirkland, WA 98034

BUILDING 16

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E16-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION);
CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED: #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.

B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H16

FED FROM: XFR — LOCATION: ELECTRICAL ROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
AIC: SEE SINGLE-LINE DIAGRAM — BUS RATING: 200 AMPS — MLO OR MCB: MLO 200 AMPS

CKT #	DESCRIPTION	CONN LOAD TYPE	CONN LOAD kVA	CKT TAG	CB AMPS/#P	PH	CB AMPS/#P	CKT TAG	CONN LOAD TYPE	CONN LOAD kVA	DESCRIPTION	CKT #
1	LTG - BREEZEWAY	L	0.27	20.1	20 / 1	A	20 / 1	20.1	N	0.60	FIRE ALARM CONTROL PANEL	2
3	SPARE		0.00		20 / 1	B	20 / 1	20.1	N	0.24	LTG TIME CLOCK	4
5	RECEPT - LVL 1 BREEZEWAY	R	0.36	20.1	20 / 1	A	20 / 1			0.00	SPARE	6
7	RECEPT - LVL 2 BREEZEWAY	R	0.36	20.1	20 / 1	B	20 / 1	20.1	R	0.54	RECEPTS - ELECT RM	8
9	RECEPT - LVL 3 BREEZEWAY	R	0.36	20.1	20 / 1	A	20 / 1	20.1	R	0.72	RECEPTS - TELECOM	10
11	LTG - ELECT / MECH CLOSETS	L	0.24	20.1	20 / 1	B	20 / 1	20.1	R	0.36	RECEPTS - TELECOM	12
13	ELECT HEATER - FIRE SPRINKLER	C	1.50	20.1	20 / 1	A	20 / 1			0.00	SPARE	14
15	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.24	20.1	20 / 1	B	20 / 1	20.1	R	0.72	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - 'WH-1'	18
19	SPARE		0.00		20 / 1	B					"	20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20.1	20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - 'WH-2'	22
23	SPARE		0.00		20 / 1	B					"	24
25	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - 'WH-3'	26
27	SPARE		0.00		20 / 1	B					"	28
29	SPACE ONLY					A	30 / 2	30.2N	C	4.50	WH SWING TANK - 'SWH-1'	30
31	SPACE ONLY					B					"	32
33	SPACE ONLY					A	20 / 1	20.1	N	0.36	CIRC PUMP 'CP-1' & MIX VALVE 'MV-1'	34
35	SPACE ONLY					B	20 / 1	20.1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

	CONNECTED LOAD	DEMAND FACTOR	DEMAND LOAD
L = LIGHTING	0.51 kVA	125%	0.64 kVA
R = RECEPTACLES	4.14 kVA	NEC 220.44	4.14 kVA
M = MOTORS	0.24 kVA	100%	0.24 kVA
PLUS 25% OF LARGEST MOTOR	0.24 kVA	25%	0.06 kVA
C = CONTINUOUS	11.18 kVA	125%	13.98 kVA
N = NON-CONTINUOUS	1.44 kVA	100%	1.44 kVA
K = KITCHEN	0.00 kVA	75%	0.00 kVA

PANEL CONNECTED TOTAL: 17.51 kVA, 72.98 AMPS

PANEL DEMAND TOTAL: 20.50 kVA, 85.41 AMPS

NOTES:

A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):

1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER.

LOAD CENTER - 2 BEDROOM

FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
AIC: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — MLO OR MCB: MLO 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/#P	PH	CB AMPS/#P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN LTG. RECEPTS. SD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ERV, MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	DED RECEPT - AC UNIT (BY TENANT)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B				20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:

A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.

B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG

CIRCUIT NOTES (X):

1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

LOAD CENTER - 3 BEDROOM

FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
AIC: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — MLO OR MCB: MLO 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/#P	PH	CB AMPS/#P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN LTG, RECEPTS. SD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ERV, MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:

A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.

B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):

1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS: VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-3	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-1	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.163					2
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS; CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES; DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM. COORDINATE EXACT REQUIRMEMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	240 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3

NOTES:

1. CONFIRM EXACT LOCATION WITH ARCHITECT.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 12 UNIT STACKED FLATS

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES: BED 1	BED 2	BED 3	LIVING
A	2-BDRM	CH-0.84	CH-0.7		CH-1.8
B	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
C	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
D	2-BDRM	CH-0.84	CH-0.7		CH-1.8
E	2-BDRM	CH-0.56	CH-0.56		CH-0.93
F	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
G	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
H	2-BDRM	CH-0.56	CH-0.56		CH-0.93
I	2-BDRM	CH-0.7	CH-0.56		CH-1.12
J	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
K	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
L	2-BDRM	CH-0.7	CH-0.56		CH-1.12

NOTES:

A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.

B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 16

BID SET

GEORGINNA M. LUCAS — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

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TITLE

SCHEDULES

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JOB NO. 22016
SHEET NO.:

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/630 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE
& SPECS FOR ALL 'S' LIGHTING FIXTURES.

10/7/2021 7:33:34 AM

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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117 S. Main St., Suite 400
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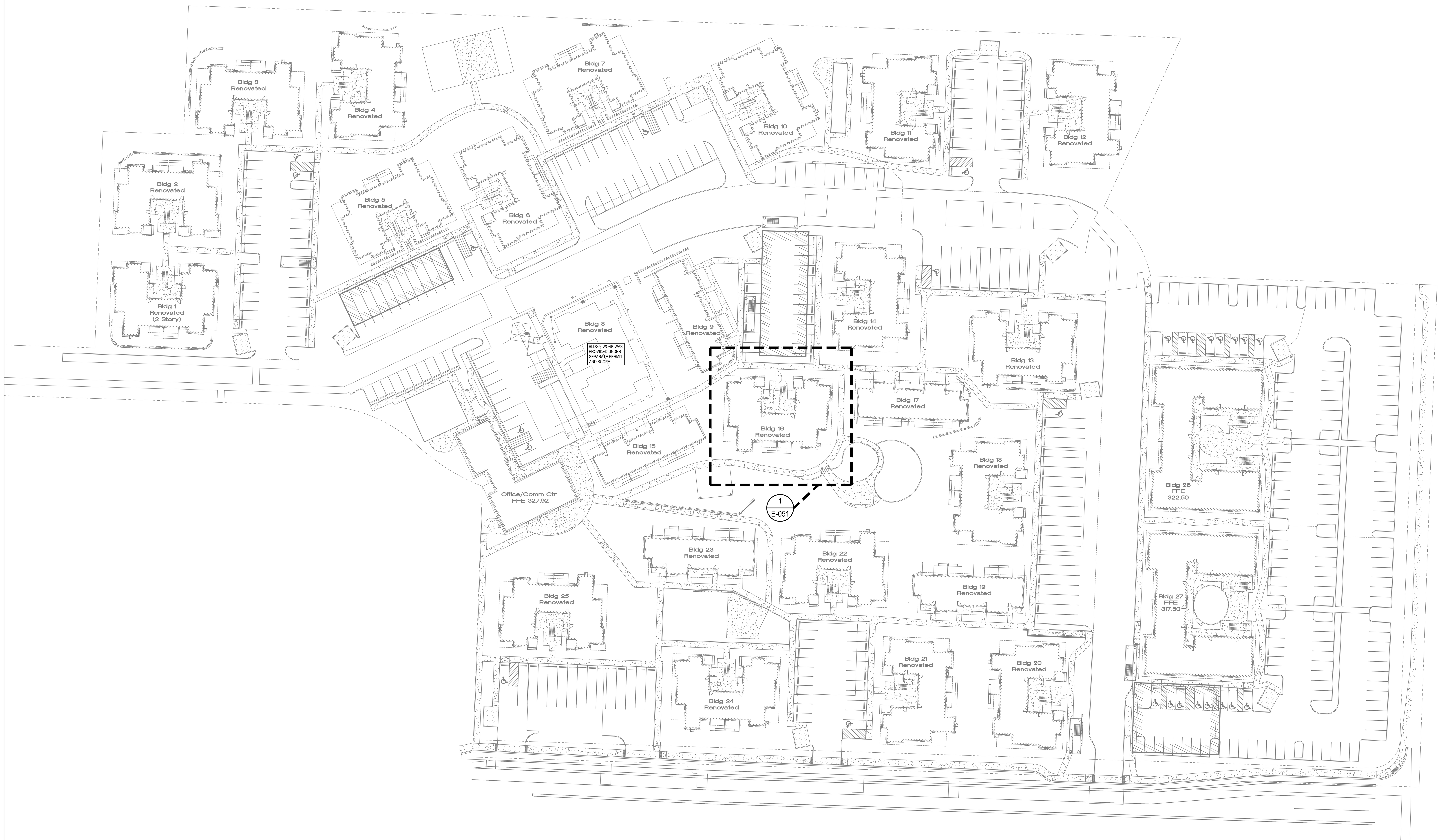


OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

10/7/2021 7:33:34 AM

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 16

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

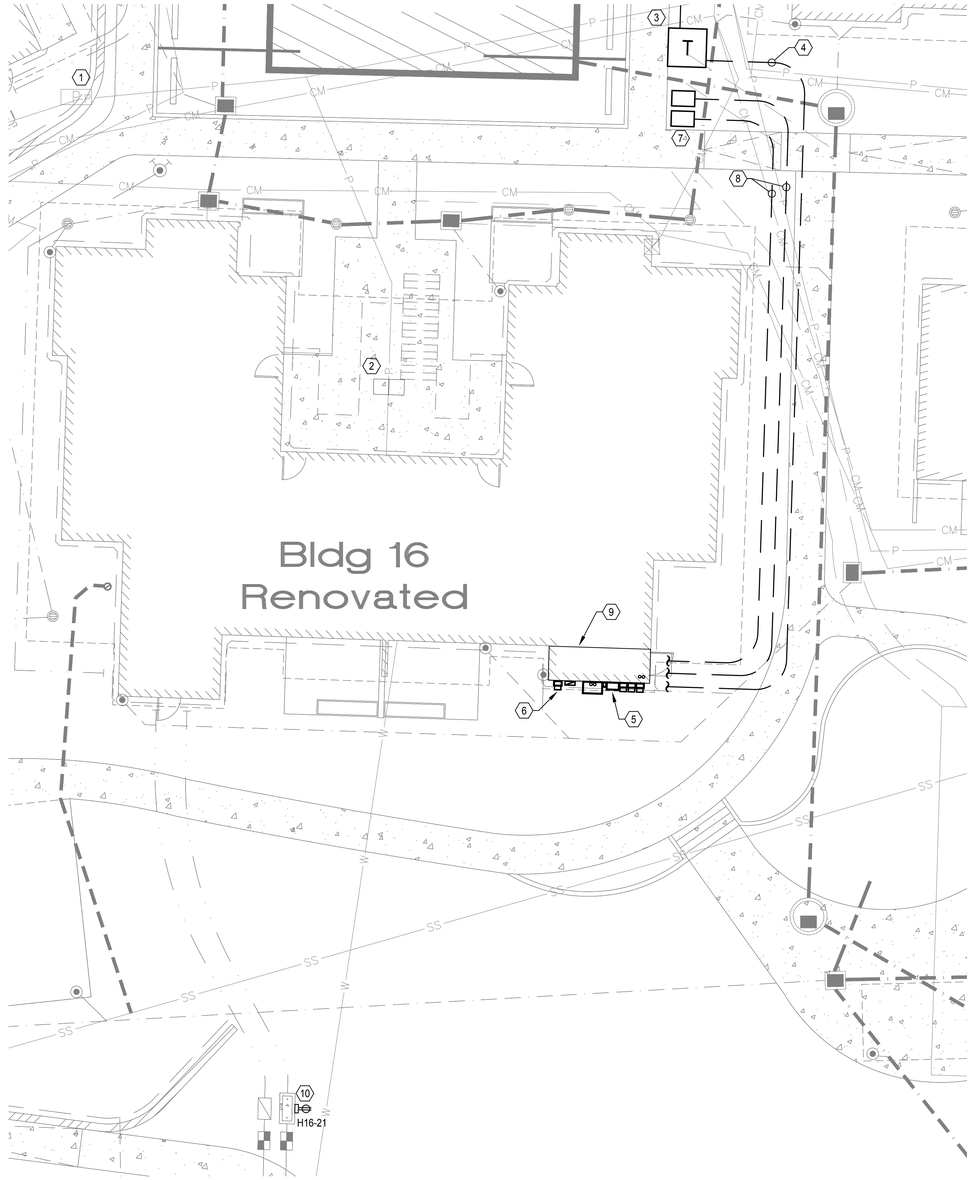
DPD STAMP

TITLE

OVERALL PROJECT SITE PLAN

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E16-050



ELECTRICAL SITE PLAN - BUILDING 16

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

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

FLAG NOTES (X):

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
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BUILDING 16

BID SET

REVISIONS / NOTES

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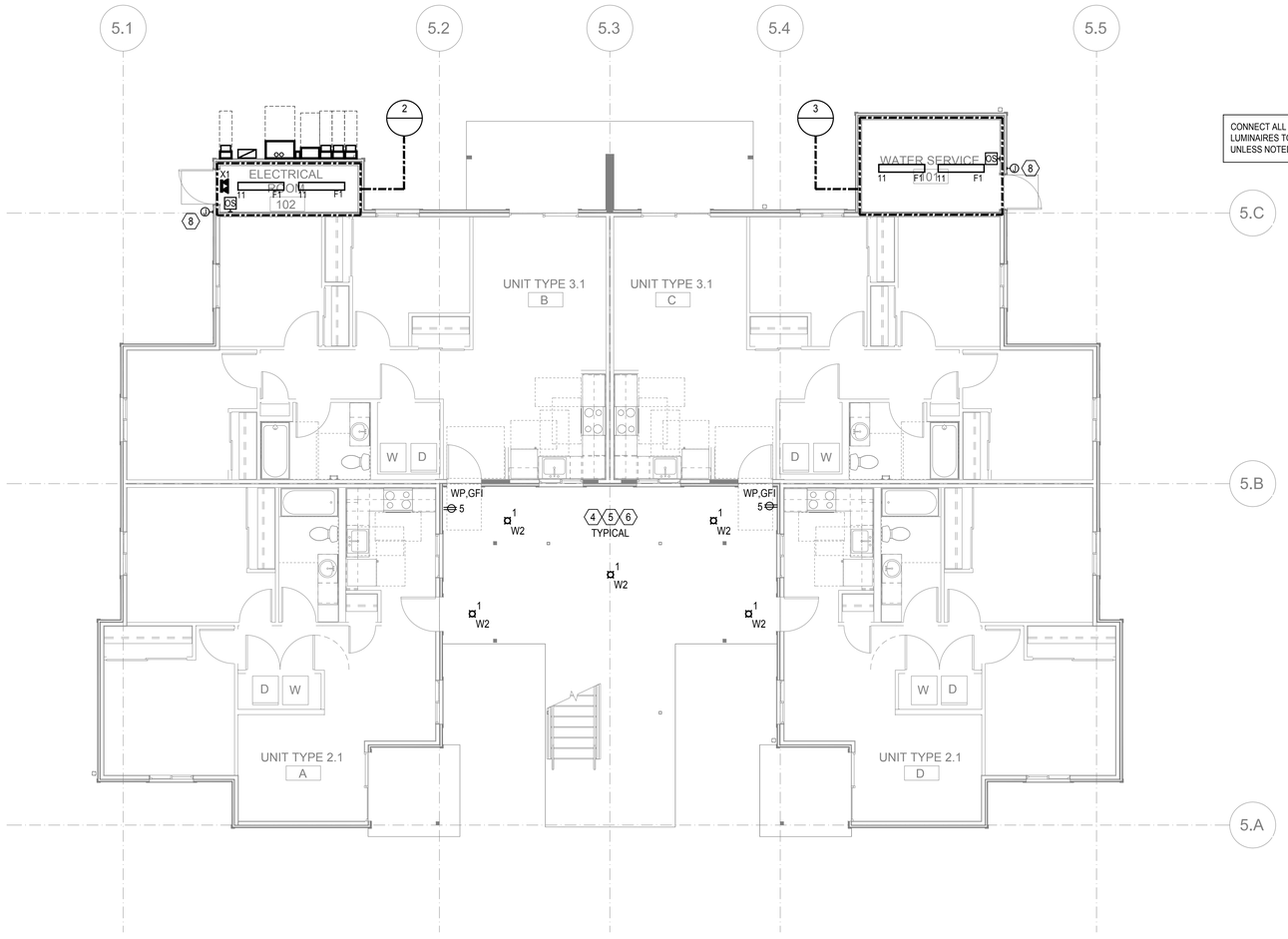
ELECTRICAL SITE PLAN - BUILDING 16

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E16-051

10/7/2021 7:33:34 AM



CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H16 UNLESS NOTED OTHERWISE.

POWER AND LIGHTING PLAN - BUILDING 16 - LEVEL 1

SCALE: 3/16"=1'-0"

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

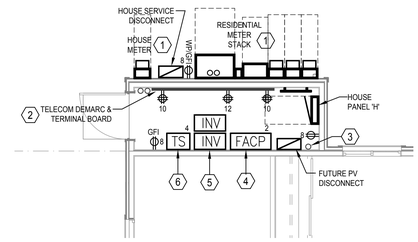
B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

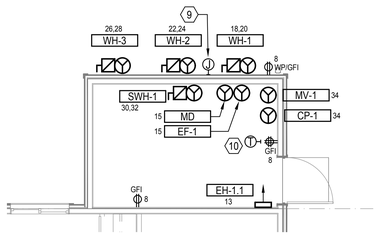
D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.
2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-375-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.
7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.
8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.
10. CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



2 E-101 **ELECTRICAL ROOM**
1/4"=1'-0"



3 E-101 **WATER ROOM**
1/4"=1'-0"

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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SMR Architects
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PH: 206.623.1104
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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 16

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 16 - LEVEL 1

PERMIT #	
DRAWN	RA, JF
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ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E16-101

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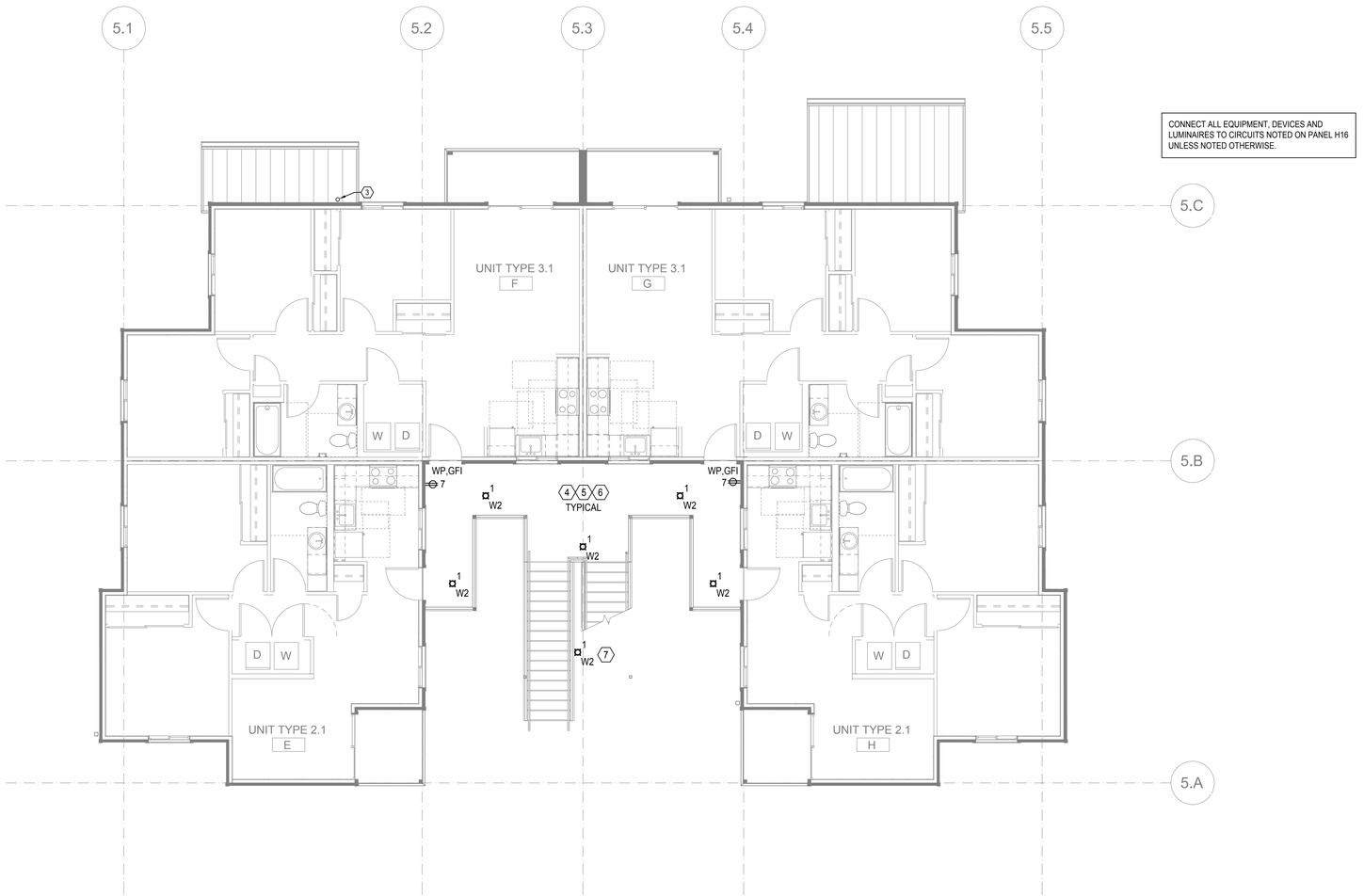

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H16 UNLESS NOTED OTHERWISE.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-375-SD
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7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.

POWER AND LIGHTING PLAN - BUILDING 16 - LEVEL 2

SCALE: 3/16"=1'-0"

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 16

BID SET

JEONGINNA M. RA — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

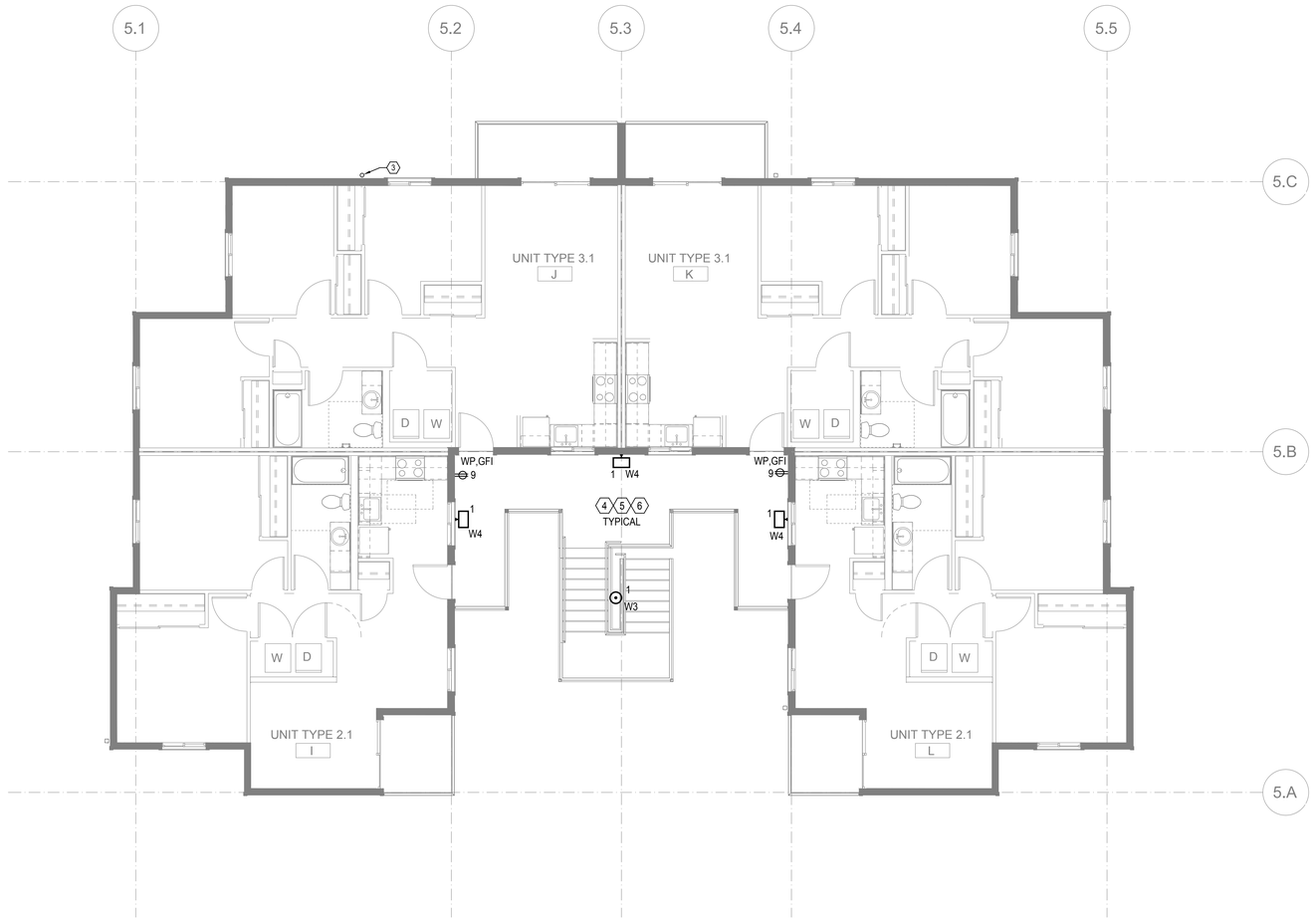
TITLE

POWER AND LIGHTING PLAN - BUILDING 16 - LEVEL 2

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E16-102

10/7/2021 7:33:34 AM



POWER AND LIGHTING PLAN - BUILDING 16 - LEVEL 3

SCALE: 3/16"=1'-0"

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

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FLAG NOTES (X):

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2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
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6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.

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KIRKLAND HEIGHTS APARTMENTS

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BUILDING 16

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

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POWER AND LIGHTING PLAN - BUILDING 16 - LEVEL 3

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E16-103

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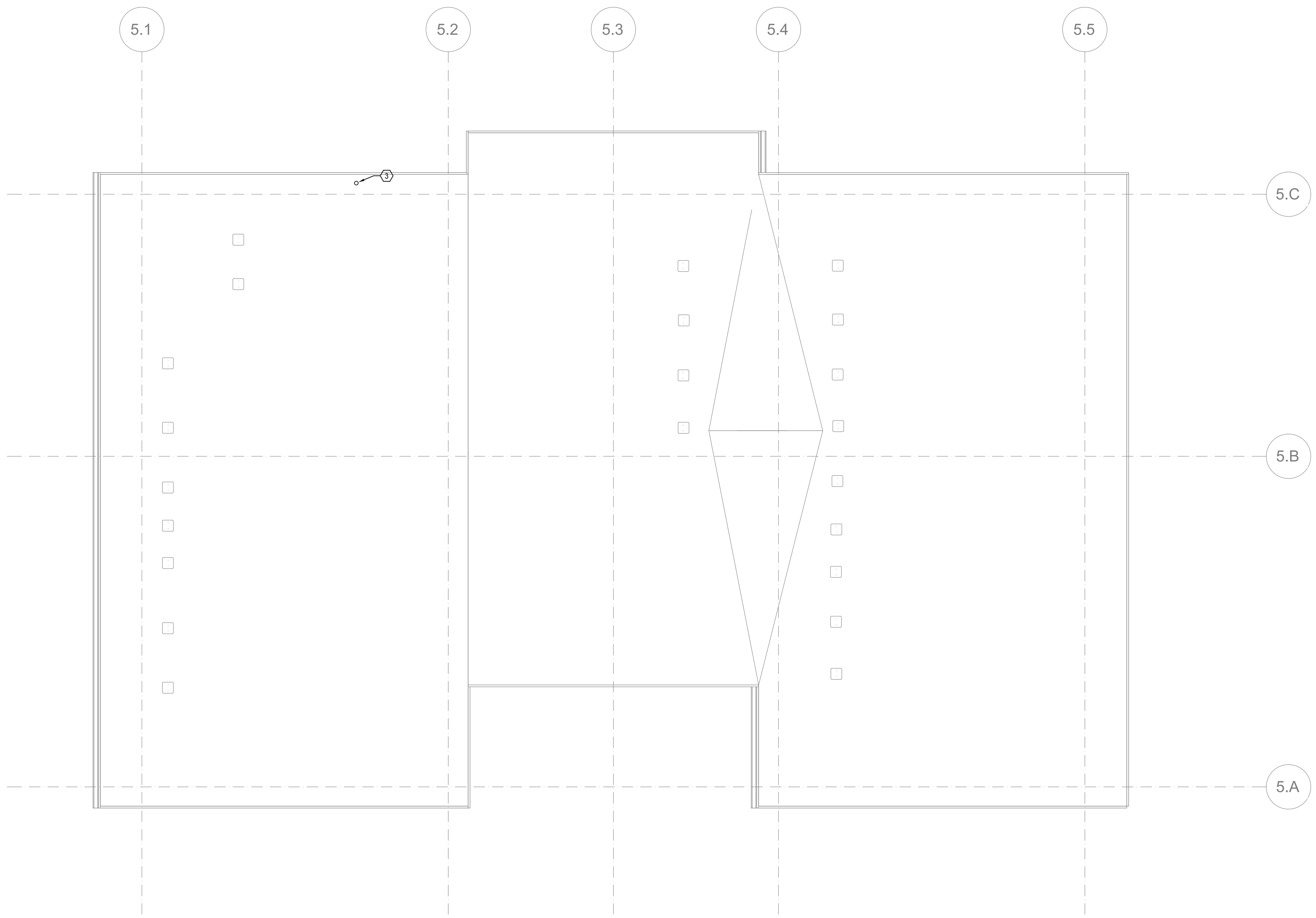
ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.



GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES ⟨X⟩:

1. NOT USED
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

POWER PLAN - BUILDING 16 - ROOF

SCALE: 3/16"=1'-0"

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
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POWER PLAN - BUILDING 16 - ROOF

PERMIT #	
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SHEET NO.:	

E16-104

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET		
		AL OR CU	PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION);
CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

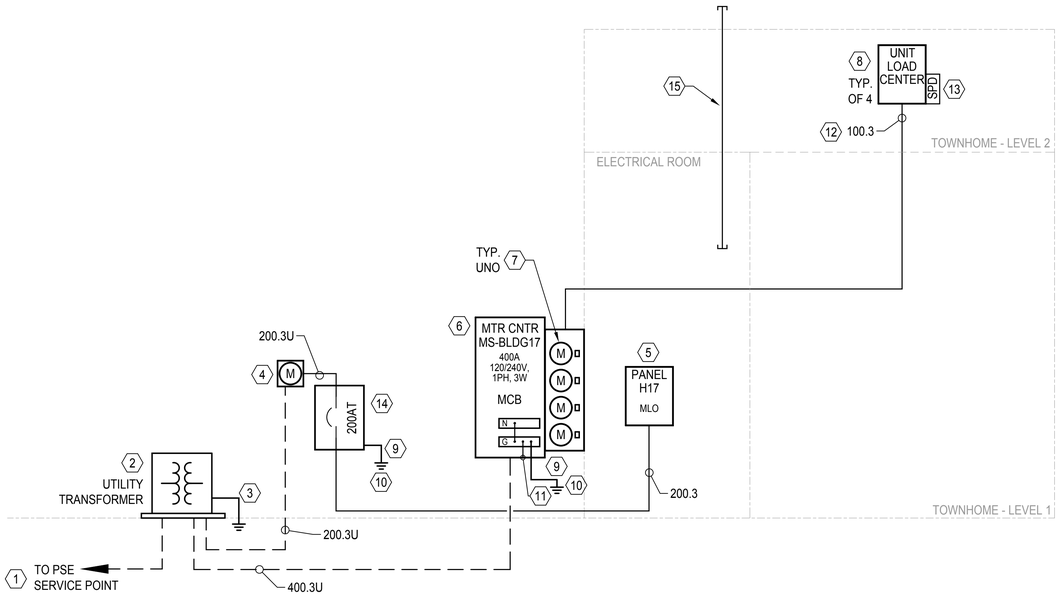
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE: NTS

FLAG NOTES ⓧ :

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (4) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 17

UNIT TYPE:	TOWNHOUSE UNIT	AREA (SF):	1,211				4/6/2023
DEMAND LOAD (kVA):	18.81 =>	78.4 AMPS AT	240	V	1	PH	

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	3.63	kVA	
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	8.13	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:	100%		=	3.00	kVA
3,001VA - 120,000VA:	35%		=	1.80	kVA
> 120,000VA:	25%		=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	**4.80**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:	TYPE	QTY		LOAD (kVA EACH)			
	REFRIGERATOR	1	AT	0.7	=	0.70	kVA
	RANGE HOOD	1	AT	0.3	=	0.30	kVA
	MICROWAVE		AT		=	0.00	kVA
	DISHWASHER	1	AT	1.2	=	1.20	kVA
	WASHER	1	AT	1.2	=	1.20	kVA
	GARBAGE DISPOSAL		AT		=	0.00	kVA
	WATER HEATER		AT		=	0.00	kVA
				SUBTOTAL (CONNECTED)	=	3.40	kVA
APPLIANCE DEMAND FACTOR [220.53]:				75%			
				GENERAL APPLIANCE LOAD - DEMAND	=	**2.55**	**kVA**

MOTORS [220.50]:		QTY		LOAD (kVA EACH)			
	TOILET EXHAUST FAN		AT		=	0.00	kVA
	ERV UNIT	1	AT	0.11	=	0.11	kVA
	KITCHEN EXHAUST FAN		AT		=	0.00	kVA
	+25% OF LARGEST MOTOR				=	0.03	kVA
				GENERAL MOTOR LOAD - DEMAND	=	**0.14**	**kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	6.08	kVA
	QTY		LOAD (kVA EACH)			
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50	kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00	kVA
ELECTRIC OVEN [220.55]		AT		=	0.00	kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00	kVA
			TOTAL DWELLING UNIT LOAD PER NEC 220, PART III	=	**27.04**	**kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	25.97	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	6.39	kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	> = 4 ELECT SPACE HEATERS, 40% NAMEPLATE	=	2.42	kVA
	TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	**18.81**	**kVA**

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL MS- 4 unit TOWNHOUSE 4/6/2023

DEMAND LOAD (kVA): 57.61 => 240.0 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING APPLIANCES 1.5< X < 3.5kW QTY	1.5< X < 3.5kW LOAD (kVA)	3.5kW < X < 8.75kW QTY	3.5kW < X < 8.75kW LOAD (kVA)	8.75kW < X < 12kW QTY	8.75kW < X < 12kW LOAD (kVA)
0								0	0.00	0	0.00	0	0.00
TOWNHOUSE UNIT	4	32.53	13.60	0.44	24.22	4	22.00	0	0.00	0	0.00	4	35.20
0								0	0.00	0	0.00	0	0.00
TOTALS:	4	32.53	13.60	0.44	24.22	4	22.00	0	0.00	0	0.00	4	35.20

ADDITIONAL 25% OF LARGEST MOTOR: 0.03

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD = 128.02 kVA
DEMAND FACTOR FROM TABLE 220.84 = 45%

TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC = 57.61 kVA

KIRKLAND HEIGHTS - TOWNHOUSE BLDG (REHAB)
PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 4): 57.61 kVA
(SEE ATTACHED CALCS)
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.
RESIDENTIAL TOTAL: 57.61 kVA
240.04 AMPS @ 120/240V, 1-PHASE
PROVIDE 400A RESIDENTIAL METER CENTER

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):	
LIGHTING - Breezeway +Interior:	0.5 kVA
LIGHTING - SITE:	1.0 kVA
GENERAL RECEPTACLES:	1.0 kVA
MECHANICAL:	kVA
ELECT HEAT (WATER RMS):	1.0 KVA
CENTRAL HOT WATER (HPWH)	5.3 KVA
ELECT SWING TANK	4.5 KVA
HEAT TRACE	0.5 kVA
MISCELLANEOUS:	2.0 kVA
EV CHARGING (2):	16.64 kVA
HOUSE TOTAL:	32.41 kVA
	89.96 AMPS @ 120/240V, 1-PHASE
WITH 25% SPARE CAPACITY	40.51 kVA
	112.4556 AMPS @ 120/240V, 1-PHASE
	PROVIDE 200A HOUSE SERVICE
TOTAL BUILDING SERVICE:	98.12 kVA
	272.36 AMPS @ 120/240V, 1-PHASE

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 17

BID SET

JOHANNA M. [illegible] STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E17-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	CONDUCTORS PER SET: PHASE / NEUTRAL (N) (QTY) SIZE	CONDUCTORS PER SET: GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

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C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

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BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED: #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.

B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H17 — FED FROM: XFR — LOCATION: ELECTRICAL ROOM

NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — SURFACE-MOUNTED

AIC: SEE SINGLE-LINE DIAGRAM — BUS RATING: 200 AMPS — MLO OR MCB: MLO 200 AMPS

CKT #	DESCRIPTION	CONN LOAD TYPE	CONN LOAD kVA	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	CONN LOAD TYPE	CONN LOAD kVA	DESCRIPTION	CKT #
1	LTG - ELECT / MECH CLOSETS	L	0.12	20.1	20 / 1	A	20 / 1	20.1	N	0.60	FIRE ALARM CONTROL PANEL	2
3	ELECT HEATER - FIRE SPRINKLER	C	1.50	20.1	20 / 1	B	20 / 1			0.00	SPARE	4
5	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.12	20.1	20 / 1	A	20 / 1			0.00	SPARE	6
7	SPARE		0.00		20 / 1	B	20 / 1	20.1	R	0.54	RECEPTS - ELECT RM	8
9	SPARE		0.00		20 / 1	A	20 / 1	20.1	R	0.36	RECEPTS - TELECOM	10
11	SPARE		0.00		20 / 1	B	20 / 1	20.1	R	0.36	RECEPTS - TELECOM	12
13	SPARE		0.00		20 / 1	A	20 / 1			0.00	SPARE	14
15	SPARE		0.00		20 / 1	B	20 / 1	20.1	R	0.54	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - 'WH-1'	18
19	SPARE		0.00		20 / 1	B					"	20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20.1	20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - 'WH-2'	22
23	SPARE		0.00		20 / 1	B					"	24
25	SPARE		0.00		20 / 1	A	20 / 1			0.00	SPARE	26
27	SPARE		0.00		20 / 1	B	20 / 1			0.00	SPARE	28
29	SPACE ONLY					A	30 / 2	30.2	C	4.50	WH SWING TANK - 'SWH-1'	30
31	SPACE ONLY					B					"	32
33	SPACE ONLY					A	20 / 1	20.1	N	0.36	CIRC PUMP 'CP-1' & MIX VALVE 'MV-1'	34
35	SPACE ONLY					B	20 / 1	20.1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

	CONNECTED LOAD	DEMAND FACTOR	DEMAND LOAD
L = LIGHTING	0.12 kVA	125%	0.15 kVA
R = RECEPTACLES	2.52 kVA	NEC 220.44	2.52 kVA
M = MOTORS	0.12 kVA	100%	0.12 kVA
PLUS 25% OF LARGEST MOTOR	0.12 kVA	25%	0.03 kVA
C = CONTINUOUS	9.46 kVA	125%	11.82 kVA
N = NON-CONTINUOUS	1.20 kVA	100%	1.20 kVA
K = KITCHEN	0.00 kVA	75%	0.00 kVA

PANEL CONNECTED TOTAL: 13.42 kVA, 55.90 AMPS

PANEL DEMAND TOTAL: 15.84 kVA, 66.00 AMPS

NOTES:

A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):

1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER.

LOAD CENTER - 4 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS

NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED

AIC: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — MLO OR MCB: MLO 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN LTG, RECEPTS, SD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ERV, MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19	BEDROOM 4 RECEPTS, LTS, SD (1)	20.1	20 / 1	B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A	20 / 1	20.1	HEAT - KITCHEN, BATH (1)	22
23	"			B				24

NOTES:

A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.

B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):

1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS: VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-2	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.135					2
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS; CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES; DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM. COORDINATE EXACT REQUIRMEMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EWH-T	DWELLING UNITS	KING	PAW WALL HEATER	0.25	120 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	120 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 5

NOTES:

1. CONFIRM EXACT LOCATION WITH ARCHITECT.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 4 UNIT TOWNHOMES

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES: BED 1	BED 2	BED 3	BED 4	KITCHEN	BATH	LIVING
A	4-BDRM	CH-0.93	CH-0.56	CH-0.56	CH-0.93	EWH-T	EWH-T	CH-1.4
B	4-BDRM	CH-0.7	CH-0.7	CH-0.7	CH-0.7	EWH-T	EWH-T	CH-1.12
C	4-BDRM	CH-0.7	CH-0.7	CH-0.7	CH-0.7	EWH-T	EWH-T	CH-1.12
D	4-BDRM	CH-0.93	CH-0.56	CH-0.56	CH-0.93	EWH-T	EWH-T	CH-1.4

NOTES:

A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.

B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

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CONTRACT #: TC2300131

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13317 NE 133rd St., Kirkland, WA 98034

BUILDING 17

BID SET

GEORGINNA M. ... STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED. MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/830 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:
1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE & SPECS FOR ALL 'S' LIGHTING FIXTURES.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

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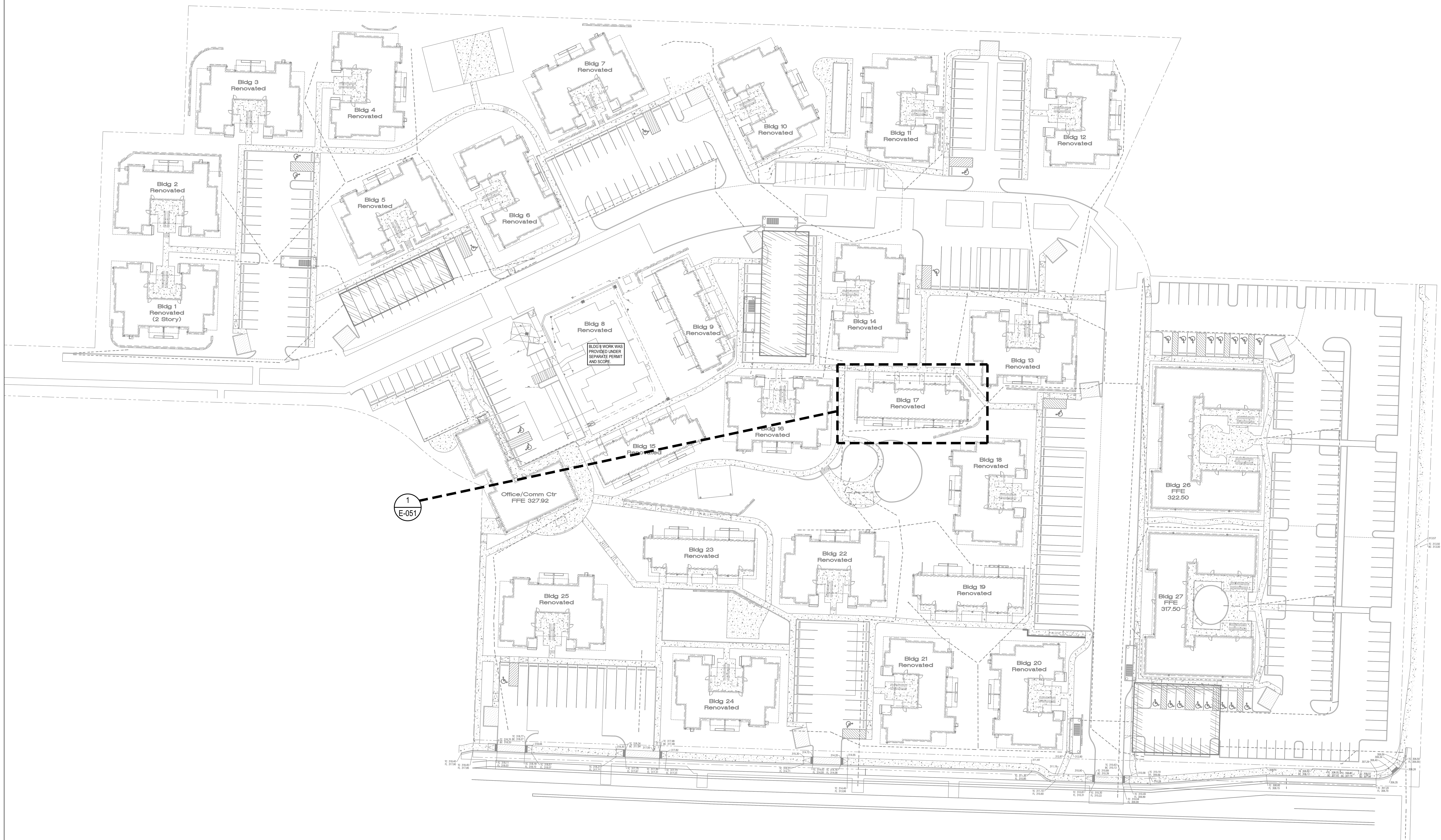

OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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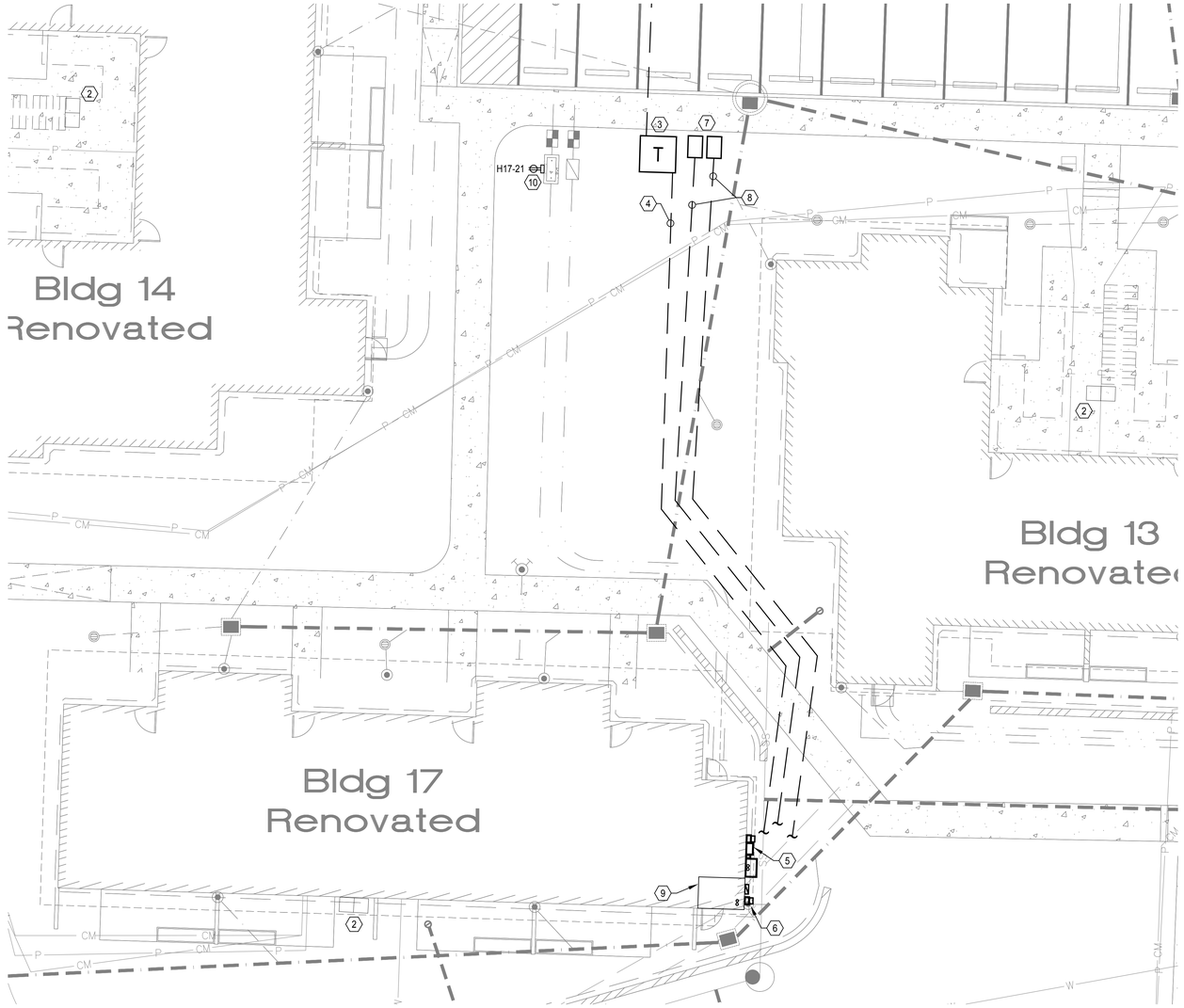

ELECTRICAL SITE PLAN - BUILDING 17

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

FLAG NOTES (X):

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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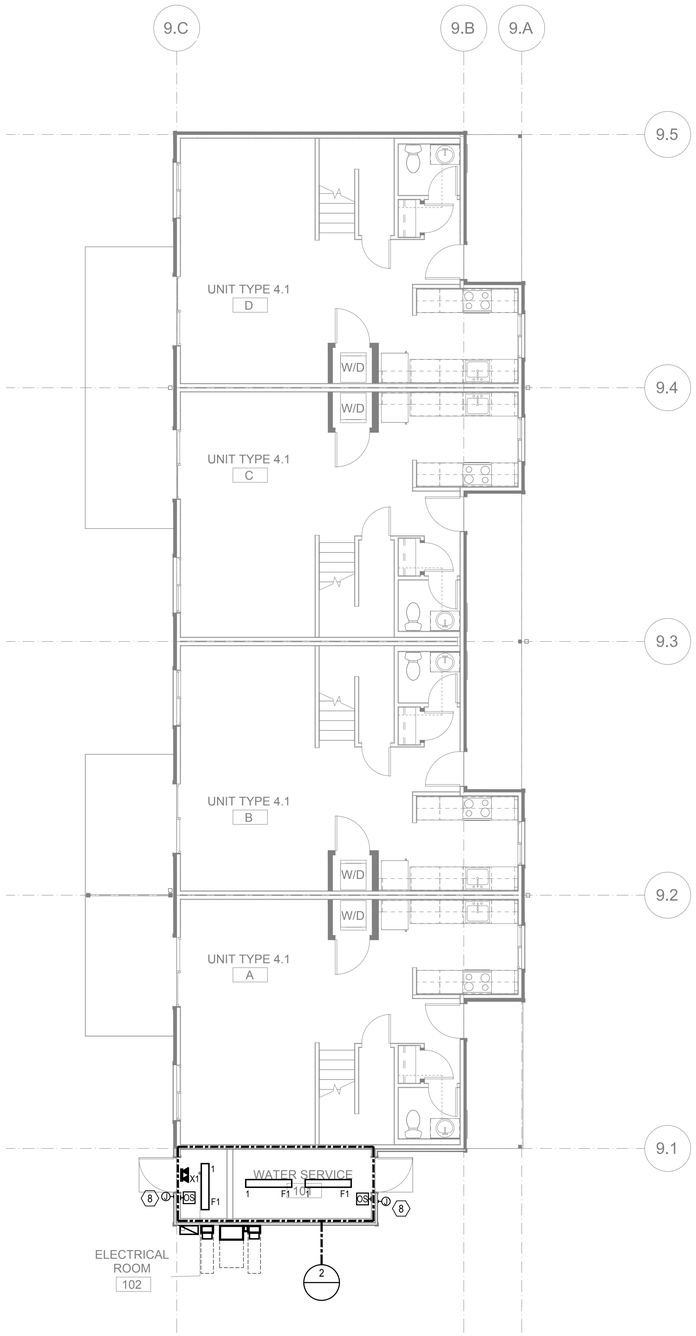


CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H17 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

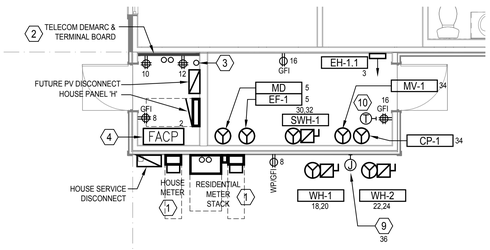
B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.
2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. NOT USED
6. NOT USED.
7. NOT USED.
8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.
10. ELECTRICAL CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



ELECTRICAL AND WATER ROOM

2 / E-101 — 1/4"=1'-0"

POWER AND LIGHTING PLAN - BUILDING 17 - LEVEL 1

SCALE: 3/16"=1'-0"

10/7/2021 7:33:34 AM

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 17

BID SET

JOAQUINNA M. FLORES — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

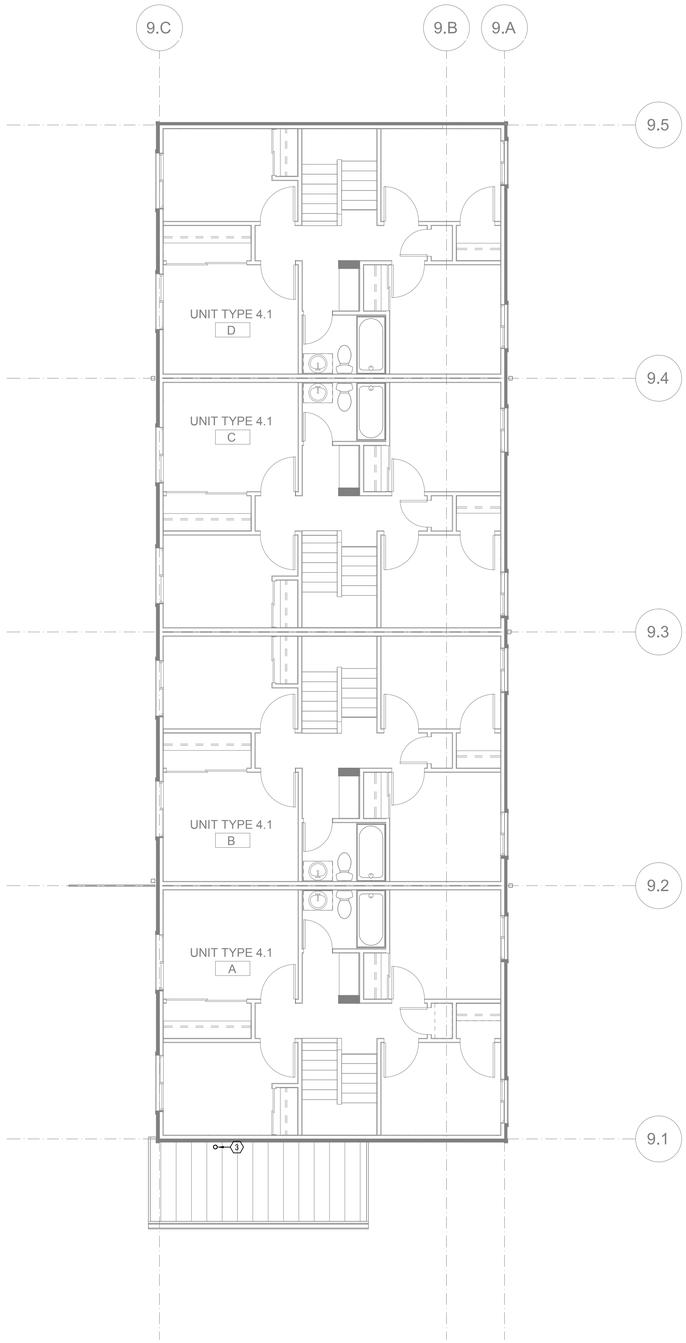
DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 17 - LEVEL 1

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E17-101



CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H10 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

POWER AND LIGHTING PLAN - BUILDING 17 - LEVEL 2

SCALE: 3/16"=1'-0"

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
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13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 17

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 17 - LEVEL 2

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016

SHEET NO.:

E17-102

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ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

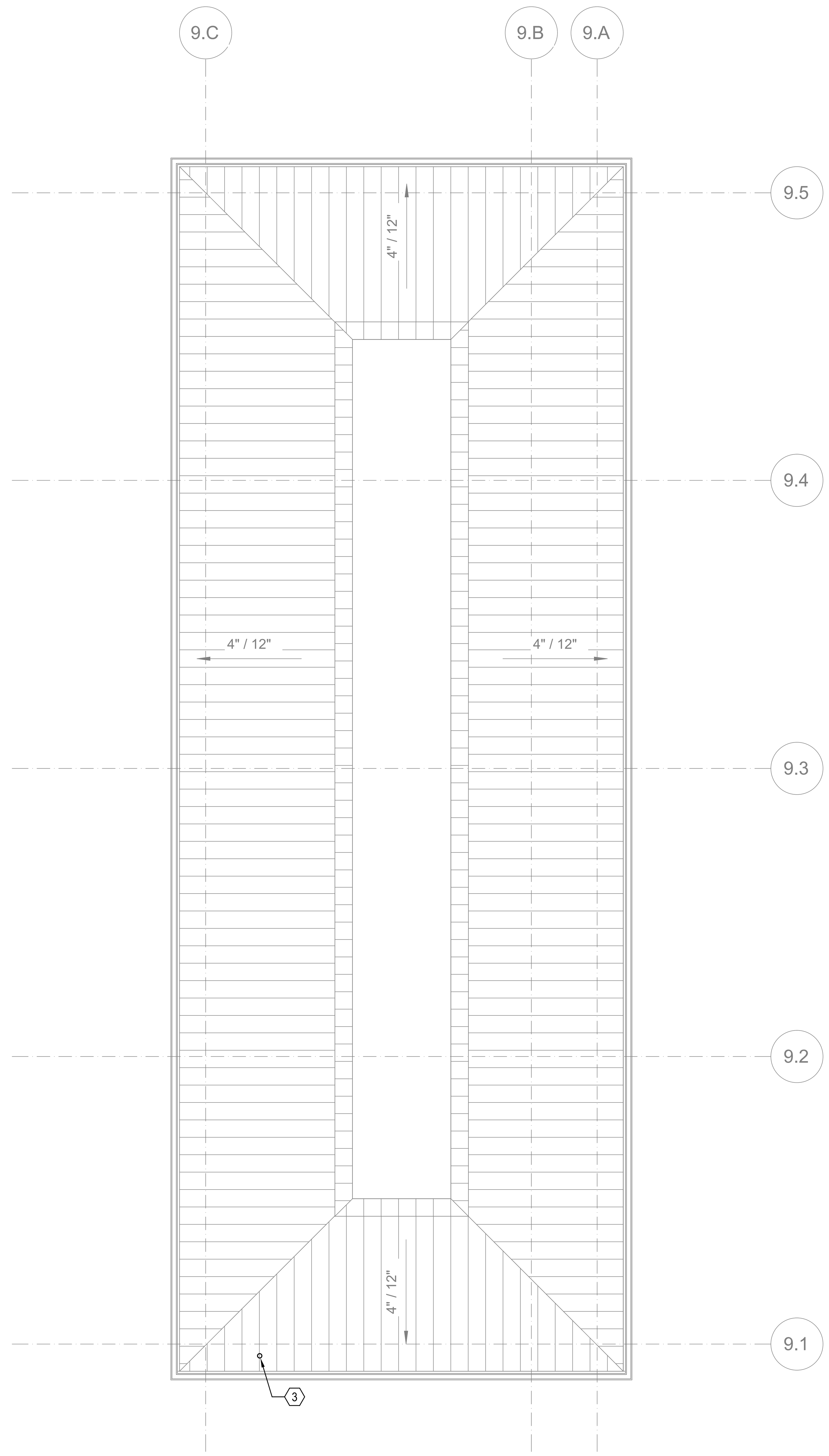
B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).



POWER PLAN - BUILDING 17 - ROOF

SCALE: 3/16"=1'-0"

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

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King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St., Kirkland, WA 98034

BUILDING 17

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER PLAN - BUILDING 17 - ROOF

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E17-103

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

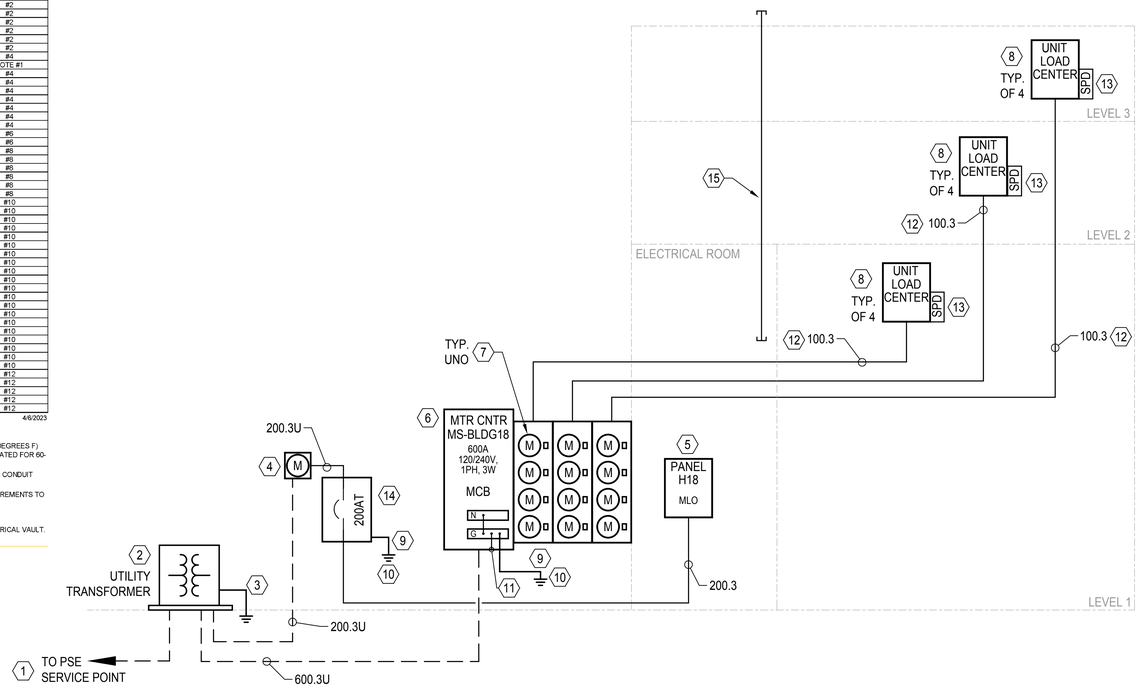
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE: NTS

FLAG NOTES (X):

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (12) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 18

UNIT TYPE: 2BR - 2.1 AREA (SF): 782 — 4/6/2023
DEMAND LOAD (kVA): 17.93 => 74.7 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF		=	2.35	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	6.85	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:	100%		=	3.00	kVA
3,001VA - 120,000VA:	35%		=	1.35	kVA
> 120,000VA:	25%		=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	4.35	kVA

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:	75%				
		GENERAL APPLIANCE LOAD - DEMAND		=	1.65 kVA

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	0.14 kVA

100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	3.91 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA
		TOTAL DWELLING UNIT LOAD PER NEC 220, PART III		=	23.54 kVA

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]			=	23.48 kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10KVA:	100%		=	10.00 kVA
> 10 KVA:	40%		=	5.39 kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS; 65% NAMEPLATE		=	2.54 kVA
		TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	17.93 kVA

UNIT TYPE: 3BR - 3.1 AREA (SF): 906 — 4/6/2023
DEMAND LOAD (kVA): 18.49 => 77.0 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF		=	2.72	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	7.22	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:	100%		=	3.00	kVA
3,001VA - 120,000VA:	35%		=	1.48	kVA
> 120,000VA:	25%		=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	4.48	kVA

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:	75%				
		GENERAL APPLIANCE LOAD - DEMAND		=	1.65 kVA

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	0.14 kVA

100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	4.53 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA
		TOTAL DWELLING UNIT LOAD PER NEC 220, PART III		=	24.29 kVA

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]			=	23.86 kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10KVA:	100%		=	10.00 kVA
> 10 KVA:	40%		=	5.54 kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS; 65% NAMEPLATE		=	2.94 kVA
		TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	18.49 kVA

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL MS - 12 unit STACK — 4/6/2023
DEMAND LOAD (kVA): 137.09 => 571.2 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING APPLIANCES 1.5< X < 3.5kW QTY	1.5< X < 3.5kW LOAD (kVA)	3.5kW < X < 8.75kW QTY	3.5kW < X < 8.75kW LOAD (kVA)	8.75kW < X < 12kW QTY	8.75kW < X < 12kW LOAD (kVA)
2BR - 2.1	6	41.08	13.20	0.66	23.46	6	33.00	0	0.00	0	0.00	6	52.80
3BR - 3.1	6	43.31	13.20	0.66	27.18	6	33.00	0	0.00	0	0.00	6	52.80
0								0	0.00	0	0.00	0	0.00
TOTALS:	12	84.38	26.40	1.32	50.64	12	66.00	0	0.00	0	0.00	12	105.60
ADDITIONAL 25% OF LARGEST MOTOR:				0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD	=	334.37	kVA
DEMAND FACTOR FROM TABLE 220.84 =		41%	
TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC	=	137.09	kVA

KIRKLAND HEIGHTS - 12 UNIT STACK FLAT (REHAB)
PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 12):	137.09 kVA
(SEE ATTACHED CALCS)	
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.	
RESIDENTIAL TOTAL:	137.09 kVA
	571.22 AMPS @ 120/240V, 1-PHASE
	PROVIDE 600A RESIDENTIAL METER CENTER

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):	
LIGHTING - Breezeway +Interior:	1.5 kVA
LIGHTING - SITE:	1.5 kVA
GENERAL RECEPTACLES:	4.0 kVA
MECHANICAL:	1.0 kVA
ELECT HEAT (WATER RMS):	1.0 kVA
CENTRAL HOT WATER (HPWH)	7.7 kVA
ELECT SWING TANK	4.5 kVA
HEAT TRACE	0.5 kVA
MISCELLANEOUS:	2.5 kVA
EV CHARGING (2):	16.6 kVA
HOUSE TOTAL:	40.83 kVA
	170.14 AMPS @ 120/240V, 1-PHASE
WITH 25% SPARE CAPACITY	51.04 kVA
	212.6708 AMPS @ 120/240V, 1-PHASE
	PROVIDE 200A HOUSE SERVICE
TOTAL BUILDING SERVICE:	188.13 kVA
	783.89 AMPS @ 120/240V, 1-PHASE

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 18

BID SET

JOHANNA M. [illegible] — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	E18-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	CONDUCTORS PER SET PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.
B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H18 — FED FROM: XFR — LOCATION: ELECTRICAL ROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 200 AMPS — M.L.O OR MCB: MLO, 200 AMPS

CKT #	DESCRIPTION	CONN LOAD TYPE	kVA	CKT TAG	CB AMPS/#P	PH	CB AMPS/#P	CKT TAG	CONN LOAD TYPE	kVA	DESCRIPTION	CKT #
1	LTG - BREEZEWAY	R	0.27	20-1	20 / 1	A	20 / 1	20-1	N	0.60	FIRE ALARM CONTROL PANEL	2
3	SPARE		0.00		20 / 1	B	20 / 1	20-1	N	0.24	LTG TIME CLOCK	4
5	RECEPT - LVL 1 BREEZEWAY	R	0.36	20-1	20 / 1	A	20 / 1			0.00	SPARE	6
7	RECEPT - LVL 2 BREEZEWAY	R	0.36	20-1	20 / 1	B	20 / 1	20-1	R	0.54	RECEPTS - ELECT RM	8
9	RECEPT - LVL 3 BREEZEWAY	R	0.36	20-1	20 / 1	A	20 / 1	20-1	R	0.72	RECEPTS - TELECOM	10
11	LTG - ELECT / MECH CLOSETS	L	0.24	20-1	20 / 1	B	20 / 1	20-1	R	0.36	RECEPTS - TELECOM	12
13	ELECT HEATER - FIRE SPRINKLER	C	1.50	20-1	20 / 1	A	20 / 1			0.00	SPARE	14
15	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.24	20-1	20 / 1	B	20 / 1	20-1	R	0.72	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20-2N	C	1.73	HEATPUMP WATER HTR - WH-1	18
19	SPARE		0.00		20 / 1	B						20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20-1	20 / 1	A	15 / 2	20-2N	C	1.73	HEATPUMP WATER HTR - WH-2	22
23	LTG - SITE POLES	L	0.23	20-1	20 / 1	B						24
25	SPARE		0.00		20 / 1	A	15 / 2	20-2N	C	1.73	HEATPUMP WATER HTR - WH-3	26
27	SPARE		0.00		20 / 1	B						28
29	SPACE ONLY					A	30 / 2	30-2N	C	4.50	WH SWING TANK - SWH-1	30
31	SPACE ONLY					B						32
33	SPACE ONLY					A	20 / 1	20-1	N	0.36	CIRC PUMP "CP-1" & MIX VALVE "MV-1"	34
35	SPACE ONLY					B	20 / 1	20-1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

		CONNECTED LOAD		DEMAND FACTOR	DEMAND LOAD	
L	= LIGHTING	0.74	kVA	125%	0.93	kVA
R	= RECEPTACLES	4.14	kVA	NEC 220-44	4.14	kVA
M	= MOTORS	0.24	kVA	100%	0.24	kVA
	PLUS 25% OF LARGEST MOTOR	0.24	kVA	25%	0.06	kVA
C	= CONTINUOUS	11.18	kVA	125%	13.98	kVA
N	= NON-CONTINUOUS	1.44	kVA	100%	1.44	kVA
K	= KITCHEN	0.00	kVA	75%	0.00	kVA

PANEL CONNECTED TOTAL: 17.74 kVA, 73.93 AMPS
PANEL DEMAND TOTAL: 20.79 kVA, 86.63 AMPS

NOTES:
A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER

LOAD CENTER - 2 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O OR MCB: MLO, 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/#P	PH	CB AMPS/#P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20-1	20 / 1	A	40 / 2	40-2N	RANGE	2
3	GEN LTG, RECEPTS, SD (1)	20-1	20 / 1	B			-	4
5	RECEPTS, ERV, MEDIA PNL (1)	20-1	20 / 1	A	20 / 2	20-2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20-1	20 / 1	B			-	8
9	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	A	20 / 3	20-3	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	B			-	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	30 / 2	30-2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20-1	20 / 1	B			-	16
17	DED RECEPT - AC UNIT (BY TENANT)	20-1	20 / 1	A	20 / 1	20-1	WASHER (2)	18
19				B				20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

LOAD CENTER - 3 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O OR MCB: MLO, 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/#P	PH	CB AMPS/#P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20-1	20 / 1	A	40 / 2	40-2N	RANGE	2
3	GEN LTG, RECEPTS, SD (1)	20-1	20 / 1	B			-	4
5	RECEPTS, ERV, MEDIA PNL (1)	20-1	20 / 1	A	20 / 2	20-2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20-1	20 / 1	B			-	8
9	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	A	20 / 3	20-3	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	B			-	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	30 / 2	30-2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20-1	20 / 1	B			-	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	20 / 1	20-1	WASHER (2)	18
19				B	20 / 1	20-1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-3	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-1	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.163					2
			/						
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS; CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES. DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	240 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3

NOTES:
1. CONFIRM EXACT LOCATION WITH ARCHITECT.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 12 UNIT STACKED FLATS

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES BED 1	BED 2	BED 3	LIVING
A	2-BDRM	CH-0.84	CH-0.7		CH-1.8
B	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
C	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
D	2-BDRM	CH-0.84	CH-0.7		CH-1.8
E	2-BDRM	CH-0.56	CH-0.56		CH-0.93
F	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
G	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
H	2-BDRM	CH-0.56	CH-0.56		CH-0.93
I	2-BDRM	CH-0.7	CH-0.56		CH-1.12
J	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
K	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
L	2-BDRM	CH-0.7	CH-0.56		CH-1.12

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.

B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 18

BID SET

VIRGINNA M. BROOKSON — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

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SCHEDULES

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/630 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE
& SPECS FOR ALL 'S' LIGHTING FIXTURES.

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
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BUILDING 18

BID SET

GEORGINNA M. JACKSON
STATE OF WASHINGTON
43761
REGISTERED
PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES
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LUMINAIRE SCHEDULE

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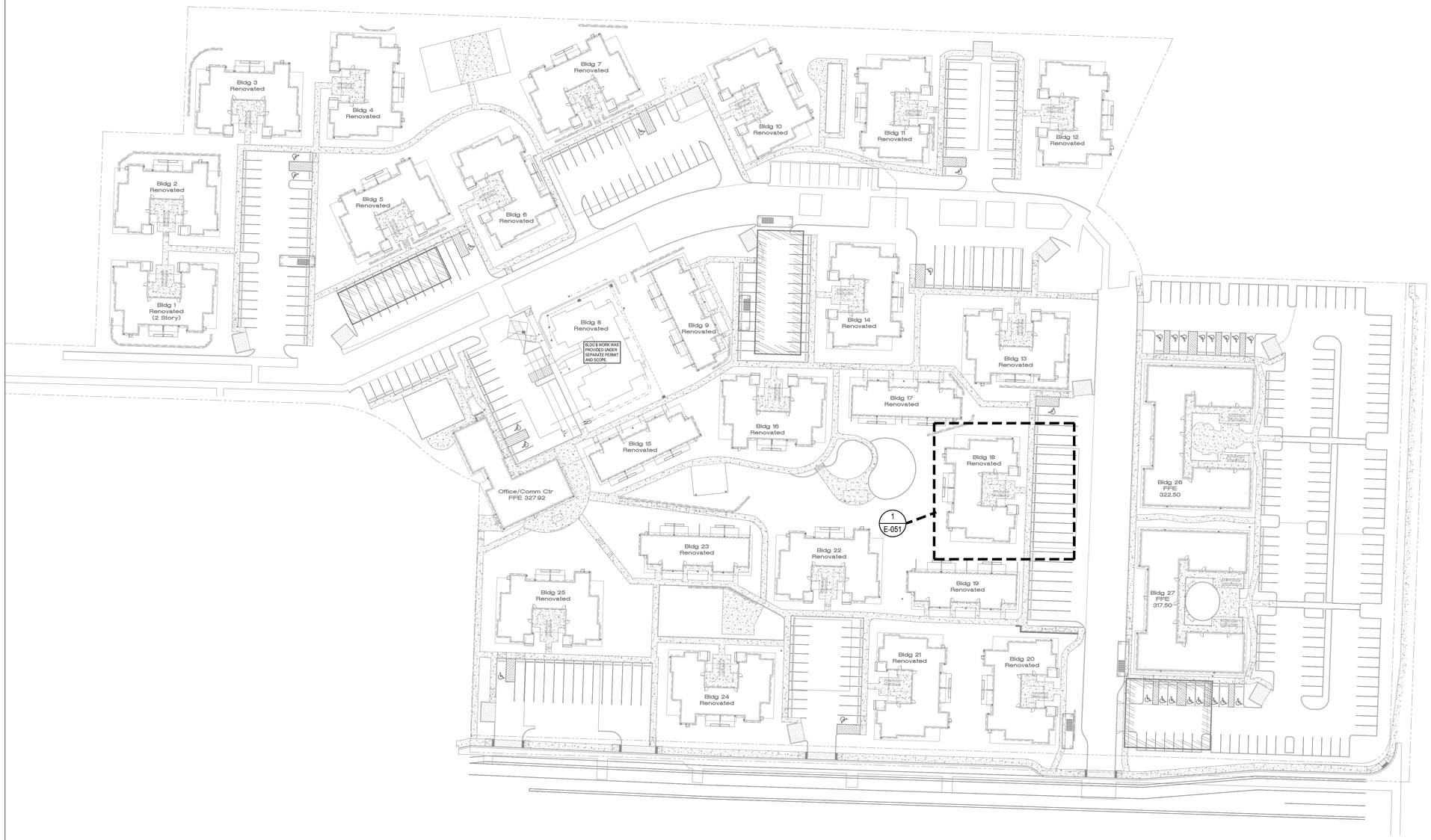
E18-005



OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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MECHANICAL + ELECTRICAL ENGINEERS
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Seattle, Washington 98109
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BUILDING 18

BID SET

PROGINNA M. JOHNSON — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

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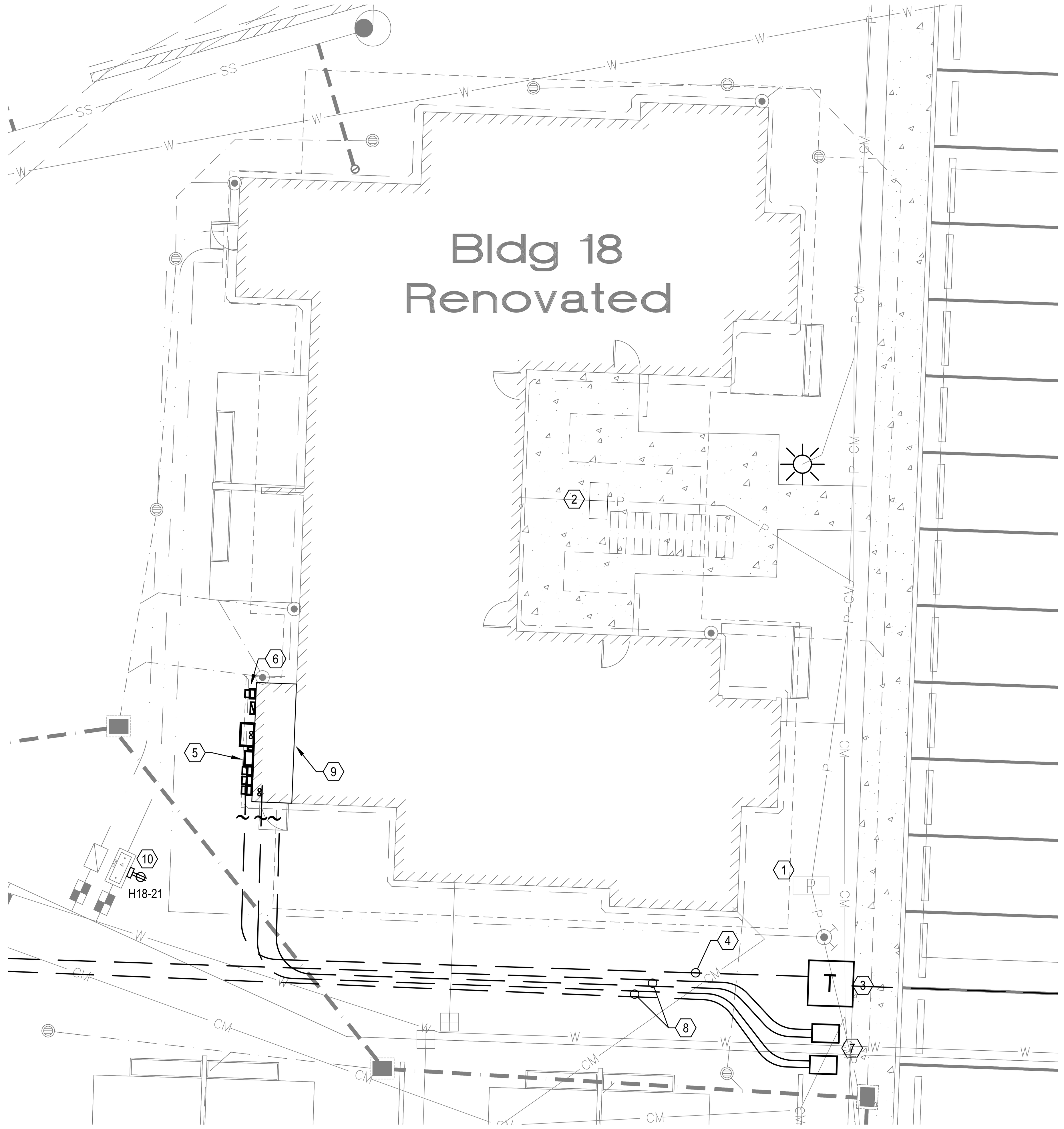
ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.



ELECTRICAL SITE PLAN - BUILDING 18

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

FLAG NOTES ⟨X⟩:

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

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ELECTRICAL SITE PLAN - BUILDING 18

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DRAWN	RA, JF
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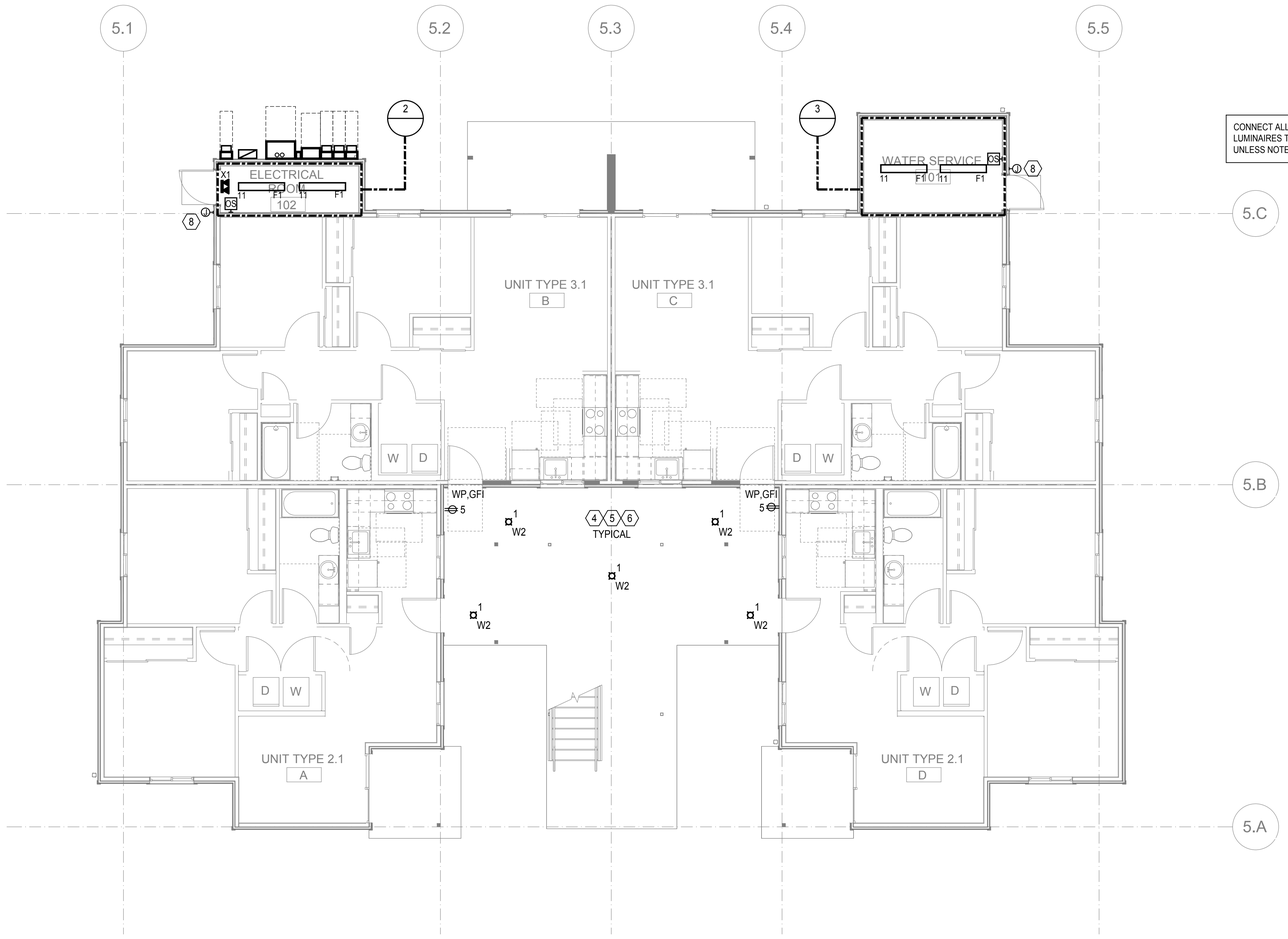
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E18-051

10/7/2021 7:33:34 AM



CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H18 UNLESS NOTED OTHERWISE.

POWER AND LIGHTING PLAN - BUILDING 18 - LEVEL 1

SCALE: 3/16"=1'-0"

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

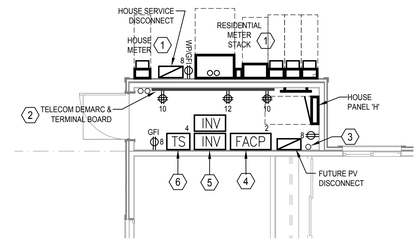
B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

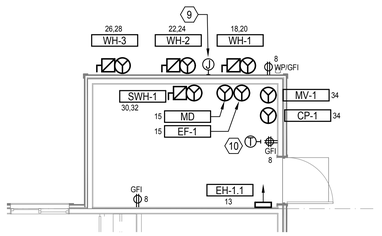
D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.
2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-375-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.
7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.
8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.
10. CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



2 E-101 **ELECTRICAL ROOM**
1/4"=1'-0"



3 E-101 **WATER ROOM**
1/4"=1'-0"

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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BUILDING 18

BID SET

REVISIONS / NOTES

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TITLE

POWER AND LIGHTING PLAN - BUILDING 18 - LEVEL 1

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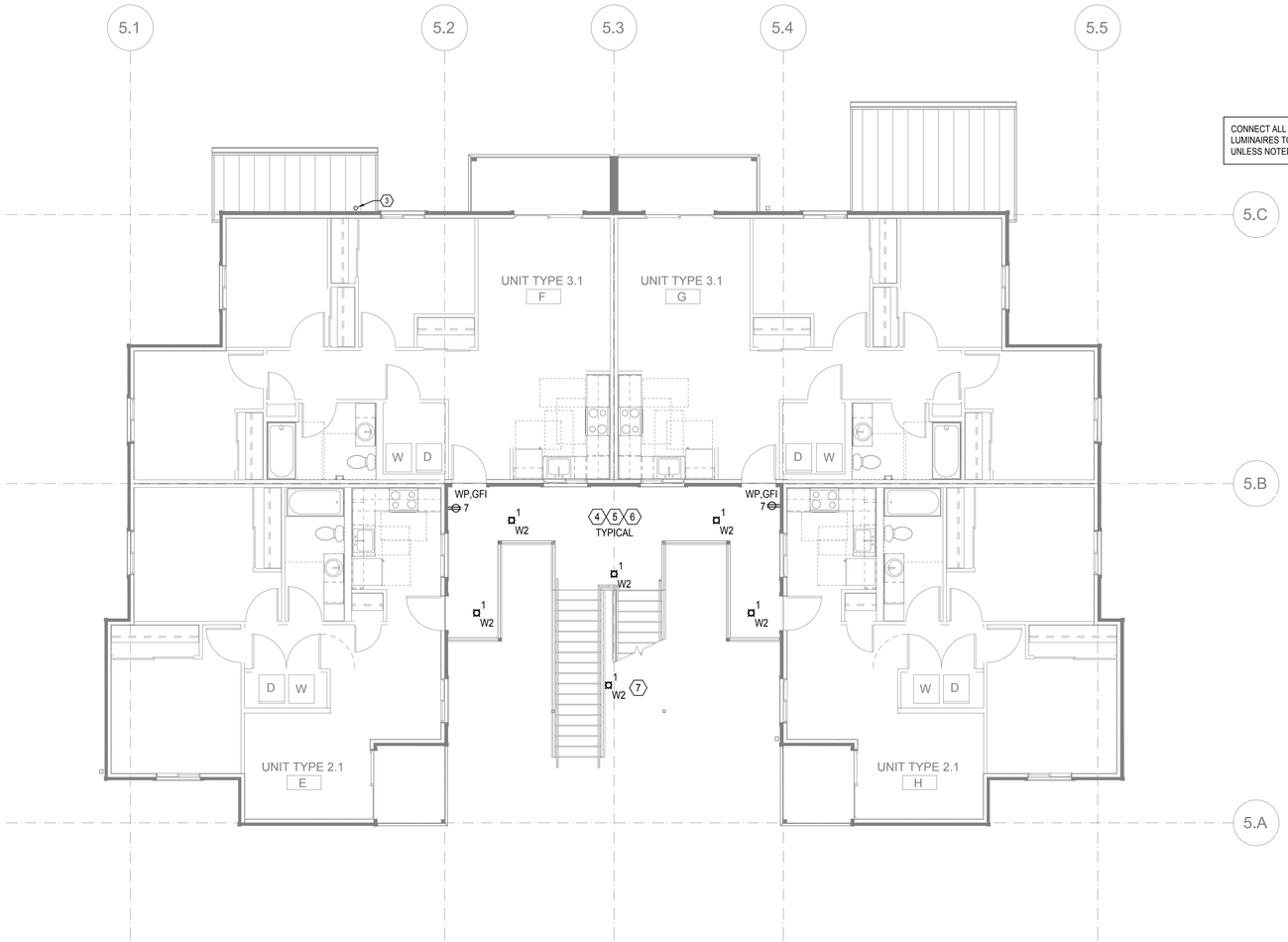

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H18 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-375-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.
7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.

POWER AND LIGHTING PLAN - BUILDING 18 - LEVEL 2

SCALE: 3/16"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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DRAWN	RA, JF
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ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

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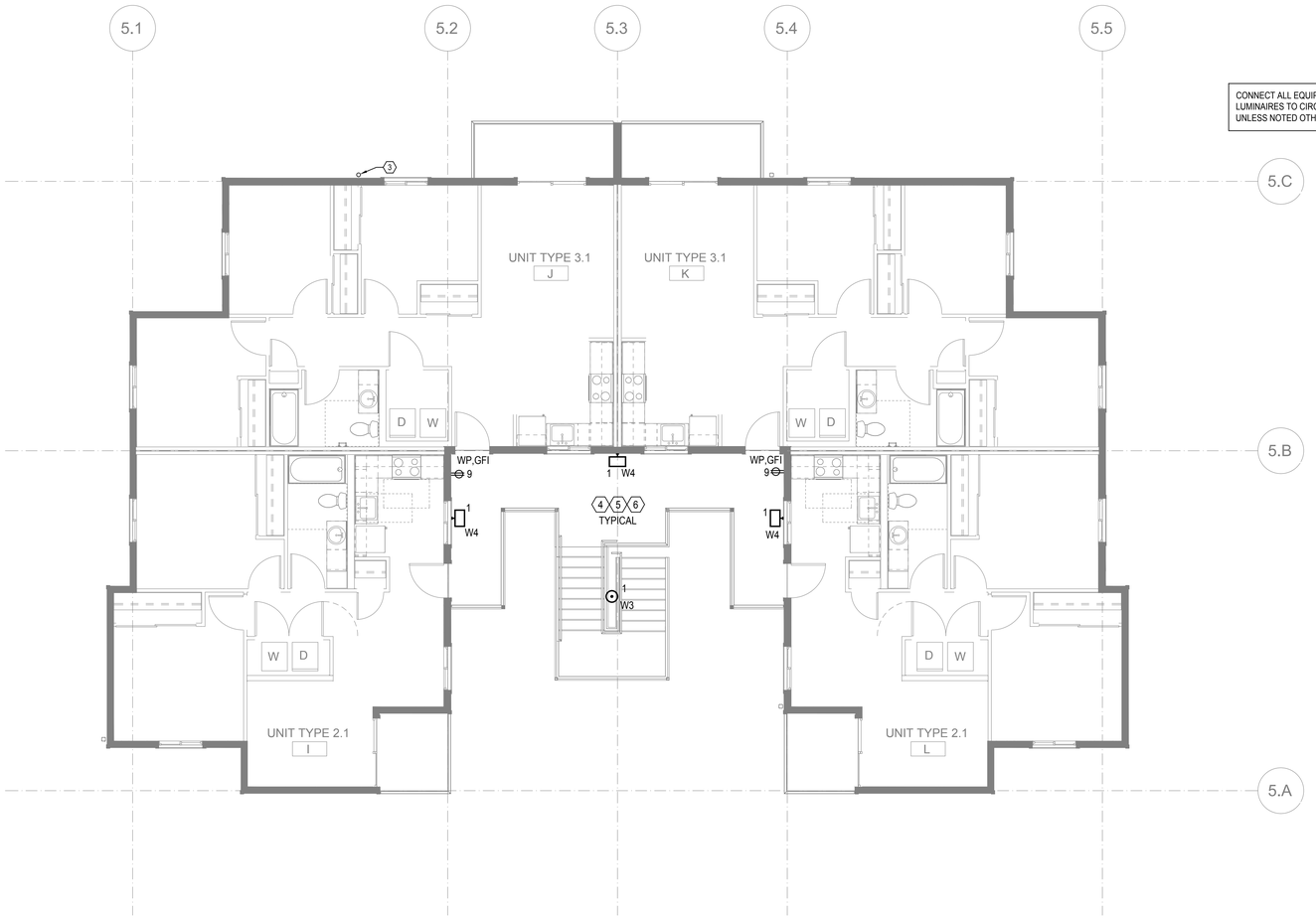
10/7/2021 7:33:34 AM



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SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-375-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.

POWER AND LIGHTING PLAN - BUILDING 18 - LEVEL 3

SCALE: 3/16"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 18

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 18 - LEVEL 3

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

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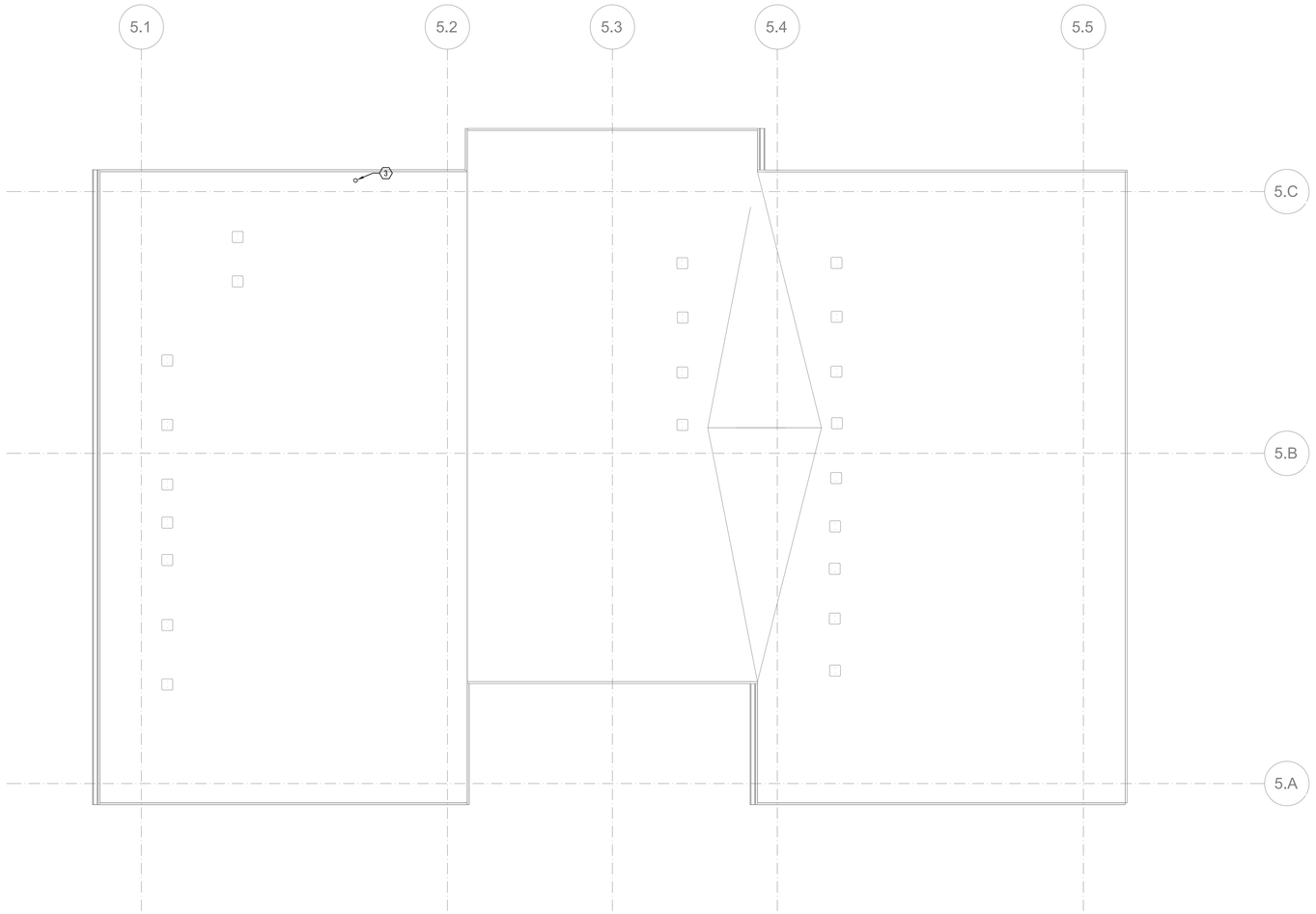

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

POWER PLAN - BUILDING 18 - ROOF

SCALE: 3/16"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

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c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 18

BID SET

GEORGINNA M. LABRECQUE
STATE OF WASHINGTON
43761
REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER PLAN - BUILDING 18 - ROOF

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016

SHEET NO.:

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FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	CONDUCTORS PER SET: PHASE / NEUTRAL (N) (QTY) SIZE	CONDUCTORS PER SET: GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION);
CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

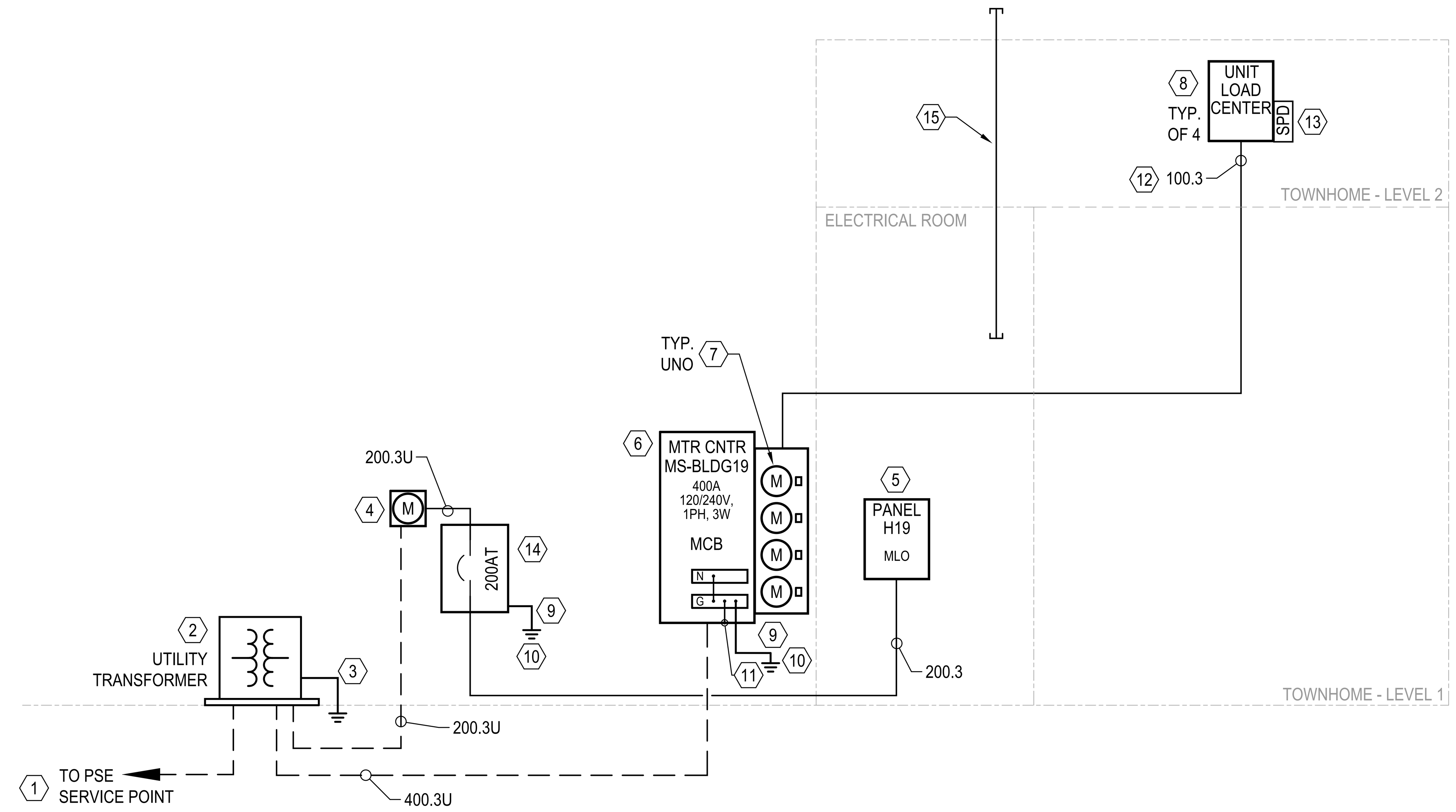
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE:NTS

FLAG NOTES ⓧ :

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (4) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 19

UNIT TYPE: TOWNHOUSE UNIT **AREA (SF):** 1,211 — 4/6/2023

DEMAND LOAD (kVA): 18.81 => 78.4 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =		AREA x 3VA/SF	=	3.63	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	8.13	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:		100%	=	3.00	kVA
3,001VA - 120,000VA:		35%	=	1.80	kVA
> 120,000VA:		25%	=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	**=**	**4.80**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)			
REFRIGERATOR	1	AT	0.7	=	0.70	kVA
RANGE HOOD	1	AT	0.3	=	0.30	kVA
MICROWAVE		AT		=	0.00	kVA
DISHWASHER	1	AT	1.2	=	1.20	kVA
WASHER	1	AT	1.2	=	1.20	kVA
GARBAGE DISPOSAL		AT		=	0.00	kVA
WATER HEATER		AT		=	0.00	kVA
			SUBTOTAL (CONNECTED)	=	3.40	kVA
APPLIANCE DEMAND FACTOR [220.53]:			75%			
			GENERAL APPLIANCE LOAD - DEMAND	**=**	**2.55**	**kVA**

MOTORS [220.50]:

	QTY		LOAD (kVA EACH)			
TOILET EXHAUST FAN		AT		=	0.00	kVA
ERV UNIT	1	AT	0.11	=	0.11	kVA
KITCHEN EXHAUST FAN		AT		=	0.00	kVA
+25% OF LARGEST MOTOR				=	0.03	kVA
			GENERAL MOTOR LOAD - DEMAND	**=**	**0.14**	**kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51] = 6.06 kVA

	QTY		LOAD (kVA EACH)			
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50	kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00	kVA
ELECTRIC OVEN [220.55]		AT		=	0.00	kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00	kVA

TOTAL DWELLING UNIT LOAD PER NEC 220, PART III = 27.04 kVA

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	25.97	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	6.39	kVA

ELECTRIC HEAT AND AC [220.82(C)]:

LARGEST LOAD OF OPTIONS: > = 4 ELECT SPACE HEATERS; 40% NAMEPLATE = 2.42 kVA

TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV = 18.81 kVA

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL MS- 4 unit TOWNHOUSE — 4/6/2023

DEMAND LOAD (kVA): 57.61 => 240.0 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING 1.5< X < 3.5kW QTY	COOKING 1.5< X < 3.5kW LOAD (kVA)	COOKING 3.5kW < X < 8.75kW QTY	COOKING 3.5kW < X < 8.75kW LOAD (kVA)	COOKING 8.75kW < X < 12kW QTY	COOKING 8.75kW < X < 12kW LOAD (kVA)
0								0	0.00	0	0.00	0	0.00
TOWNHOUSE UNIT	4	32.53	13.60	0.44	24.22	4	22.00	0	0.00	0	0.00	4	35.20
0								0	0.00	0	0.00	0	0.00
TOTALS:	4	32.53	13.60	0.44	24.22	4	22.00	0	0.00	0	0.00	4	35.20
ADDITIONAL 25% OF LARGEST MOTOR:				0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD = 128.02 kVA
DEMAND FACTOR FROM TABLE 220.84 = 45%

TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC = 57.61 kVA

KIRKLAND HEIGHTS - TOWNHOUSE BLDG (REHAB)

PRELIMINARY LOAD CALCULATIONS — 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 4): 57.61 kVA
(SEE ATTACHED CALCS)
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.

RESIDENTIAL TOTAL: 57.61 kVA
240.04 AMPS @ 120/240V, 1-PHASE
PROVIDE 400A RESIDENTIAL METER CENTER

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):

LIGHTING - Breezeway +Interior:	0.5 kVA
LIGHTING - SITE:	1.0 kVA
GENERAL RECEPTACLES:	1.0 kVA
MECHANICAL:	kVA
ELECT HEAT (WATER RMS):	1.0 KVA
CENTRAL HOT WATER (HPWH)	5.3 KVA
ELECT SWING TANK	4.5 KVA
HEAT TRACE	0.5 kVA
MISCELLANEOUS:	2.0 kVA
EV CHARGING (2):	16.64 kVA

HOUSE TOTAL: 32.41 kVA
89.96 AMPS @ 120/240V, 1-PHASE

WITH 25% SPARE CAPACITY 40.51 kVA
112.4556 AMPS @ 120/240V, 1-PHASE
PROVIDE 200A HOUSE SERVICE

TOTAL BUILDING SERVICE: 98.12 kVA
272.36 AMPS @ 120/240V, 1-PHASE

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

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PH: 206.623.1104
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King County Housing Authority

New Kirkland Heights LLLP
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13310 NE 133rd St.
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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS
13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 19
BID SET

NOT FOR CONSTRUCTION
GEORGINNA M. L... STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE
SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E19-003

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FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	CONDUCTORS PER SET PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#12
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.
B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H19 — FED FROM: XFR — LOCATION: ELECTRICAL ROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
M.C. SEE SINGLE LINE DIAGRAM — BUS RATING: 200 AMPS — M.L.O OR M.C.B.: MLO — 200 AMPS

CKT #	DESCRIPTION	CONN LOAD TYPE	CONN LOAD kVA	CKT TAG	CB AMPS/#P	PH	CB AMPS/#P	CKT TAG	CONN LOAD TYPE	CONN LOAD kVA	DESCRIPTION	CKT #
1	TG - ELECT / MECH CLOSETS	L	0.12	20.1	20 / 1	A	20 / 1	20.1	N	0.80	FIRE ALARM CONTROL PANEL	1
3	ELECT HEATER - FIRE SPRINKLER	C	1.50	20.1	20 / 1	B	20 / 1			0.20	SPARE	4
5	EX=MUEFT FAN EF-1 & MOTO DAMPER	M	0.12	20.1	20 / 1	A	20 / 1			0.00	SPARE	6
7	SPARE		0.00		20 / 1	B	20 / 1	20.1	R	0.54	RECEPTS - ELECT RM	8
9	SPARE		0.00		20 / 1	A	20 / 1	20.1	R	0.36	RECEPTS - TELECOM	10
11	SPARE		0.00		20 / 1	B	20 / 1	20.1	R	0.36	RECEPTS - TELECOM	12
13	SPARE		0.00		20 / 1	A	20 / 1			0.00	SPARE	14
15	SPARE		0.00		20 / 1	B	20 / 1	20.1	R	0.54	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 3	20.2N	C	1.73	HEATPUMP WATER HTR - WH-1	18
19	SPARE		0.00		20 / 1	B						20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20.1	20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-2	22
23	SPARE		0.00		20 / 1	B						24
25	SPARE		0.00		20 / 1	A	20 / 1			0.00	SPARE	26
27	SPARE		0.00		20 / 1	B	20 / 1			0.00	SPARE	28
29	SPACE ONLY					A	30 / 2	30.2	C	4.50	WASWING TANK - SWH-T	30
31	SPACE ONLY					B						32
33	SPACE ONLY					A	20 / 1	20.1	N	0.36	CIRC PUMP CP-T & MX VALVE WM-T	34
35	SPACE ONLY					B	20 / 1	20.1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

		CONNECTED LOAD		DEMAND FACTOR	DEMAND LOAD	
L	= LIGHTING	0.12	kVA	125%	0.15	kVA
R	= RECEPTACLES	2.52	kVA	NEC 220-44	2.52	kVA
M	= MOTORS	0.12	kVA	100%	0.12	kVA
	PLUS 25% OF LARGEST MOTOR	0.12	kVA	25%	0.03	kVA
C	= CONTINUOUS	9.46	kVA	125%	11.82	kVA
N	= NON-CONTINUOUS	1.20	kVA	100%	1.20	kVA
K	= KITCHEN	0.00	kVA	75%	0.00	kVA

PANEL CONNECTED TOTAL: 13.42 kVA, 55.90 AMPS
PANEL DEMAND TOTAL: 15.84 kVA, 66.00 AMPS

NOTES:
A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER

LOAD CENTER - 4 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
M.C. SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O OR M.C.B.: MLO — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/#P	PH	CB AMPS/#P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN'L'TG, RECEPTS, SD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ENT, MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.1	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19	BEDROOM 4 RECEPTS, LTS, SD (1)	20.1	20 / 1	B	20 / 1	20.1	DED RECEPT - AV LINT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A	20 / 1	20.1	HEAT - KITCHEN, BATH (1)	22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 8FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/					/	
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/					/	
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-2	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.135					2
			/						
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS; CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES; DISCONNECT SHALL BE ACCESSIBLE & AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H X 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H X 118"L	1, 4
EWH-T	DWELLING UNITS	KING	PAW WALL HEATER	0.25	120 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	120 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 5

NOTES:
1. CONFIRM EXACT LOCATION WITH ARCHITECT.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 4 UNIT TOWNHOMES

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES BED 1	BED 2	BED 3	BED 4	KITCHEN	BATH	LIVING
A	4-BDRM	CH-0.93	CH-0.56	CH-0.56	CH-0.93	EWH-T	EWH-T	CH-1.4
B	4-BDRM	CH-0.7	CH-0.7	CH-0.7	CH-0.7	EWH-T	EWH-T	CH-1.12
C	4-BDRM	CH-0.7	CH-0.7	CH-0.7	CH-0.7	EWH-T	EWH-T	CH-1.12
D	4-BDRM	CH-0.93	CH-0.56	CH-0.56	CH-0.93	EWH-T	EWH-T	CH-1.4

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.
B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 19

BID SET

REVISIONS / NOTES
NO DATE DESCRIPTION

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SCHEDULES

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JOB NO. 22016
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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/630-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/630 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE
& SPECS FOR ALL 'S' LIGHTING FIXTURES.

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
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BUILDING 19

BID SET

GEORGINNA M. LAMPSON
STATE OF WASHINGTON
43761
REGISTERED
PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES
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LUMINAIRE SCHEDULE

PERMIT #	
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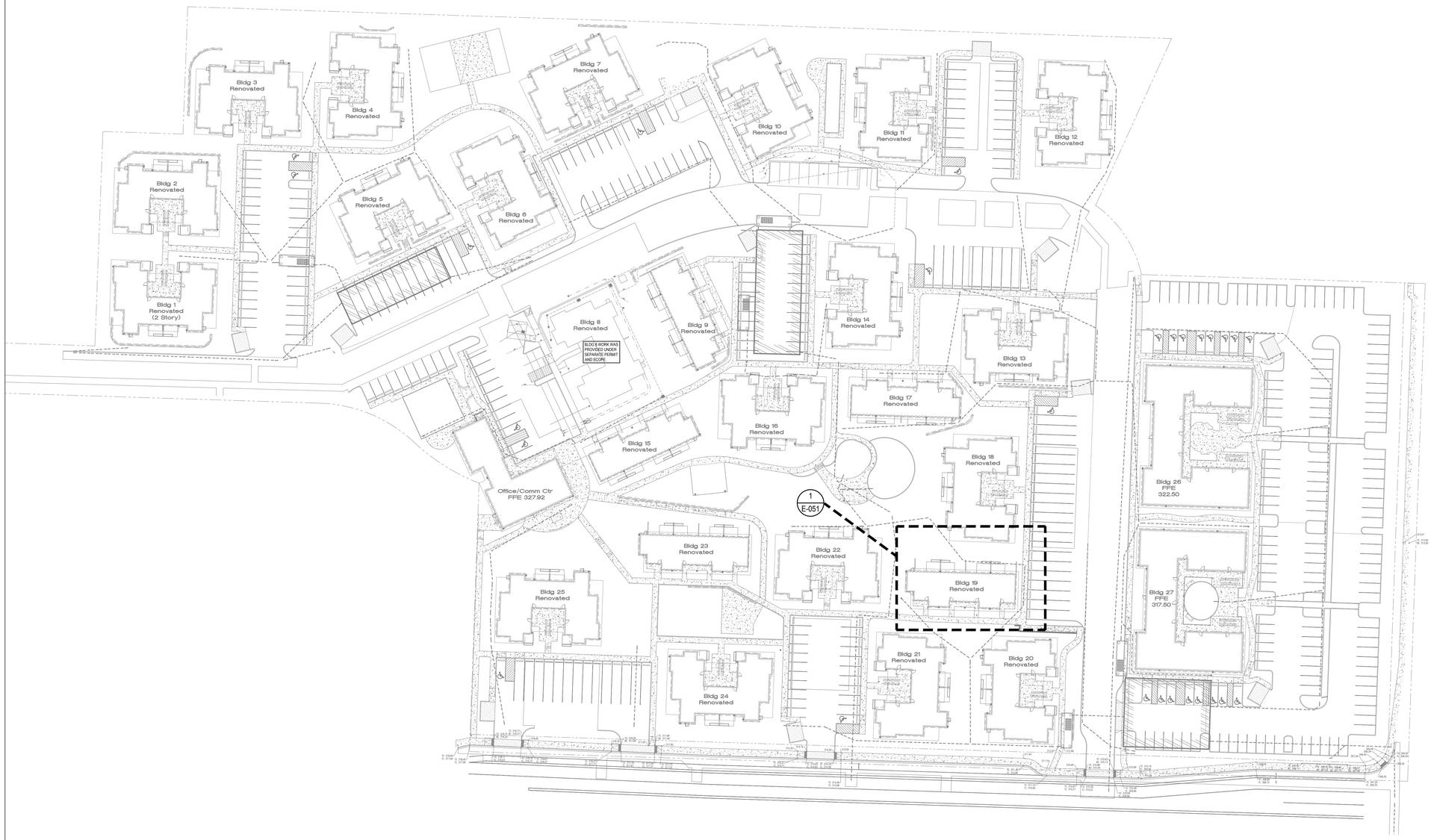

OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

10/7/2021 7:33:34 AM

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 19

BID SET

PROGINNA M. JOHNSON
STATE OF WASHINGTON
43761
REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

OVERALL PROJECT SITE PLAN

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E19-050

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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192 Nickerson, Suite #300
Seattle, Washington 98109
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SMR Architects
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PH: 206.623.1104
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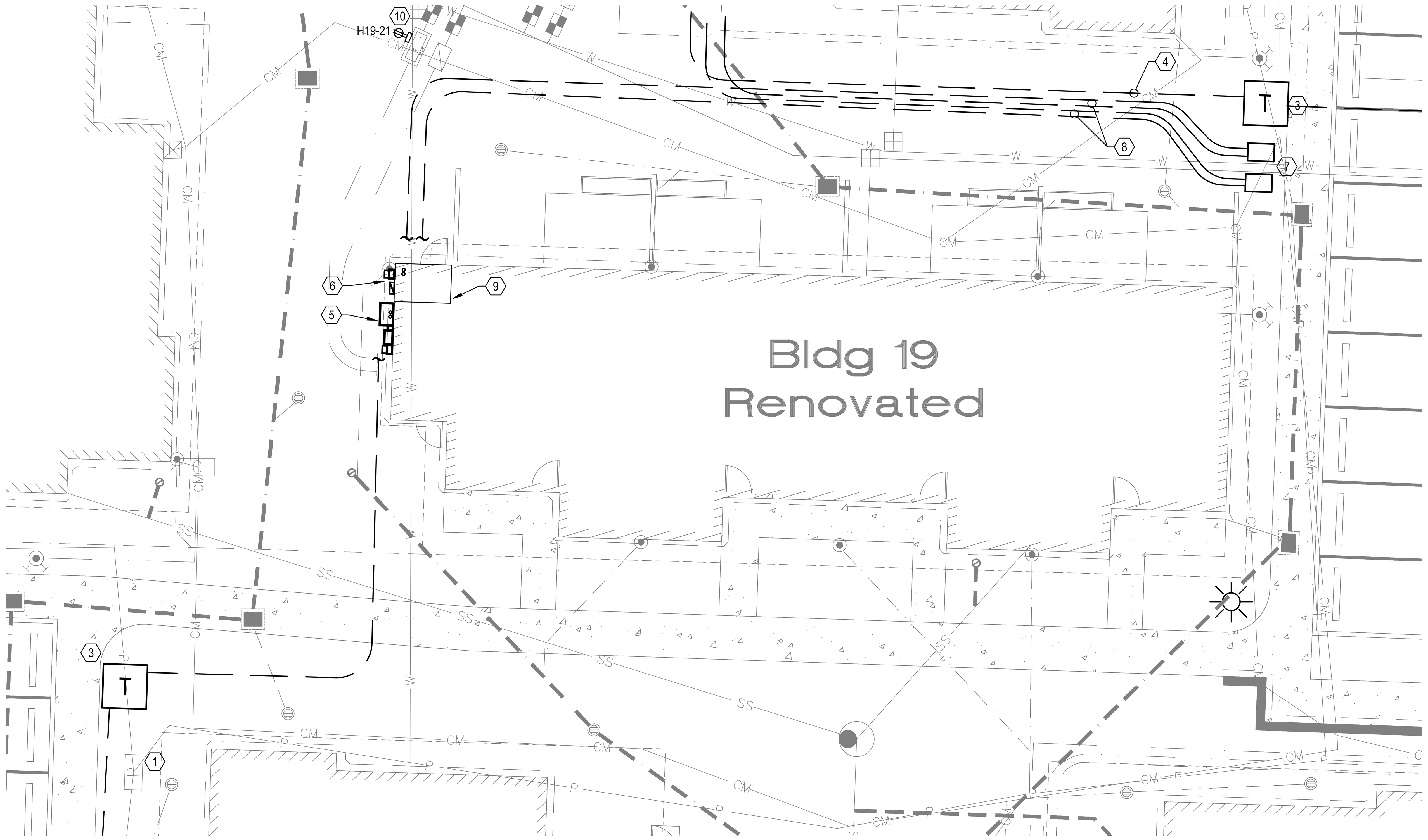

ELECTRICAL SITE PLAN - BUILDING 19

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

FLAG NOTES (X):

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 19

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

ELECTRICAL SITE PLAN - BUILDING 19

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E19-051

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ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H19 UNLESS NOTED OTHERWISE.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES ⟨X⟩:

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.

2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.

3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.

5. NOT USED

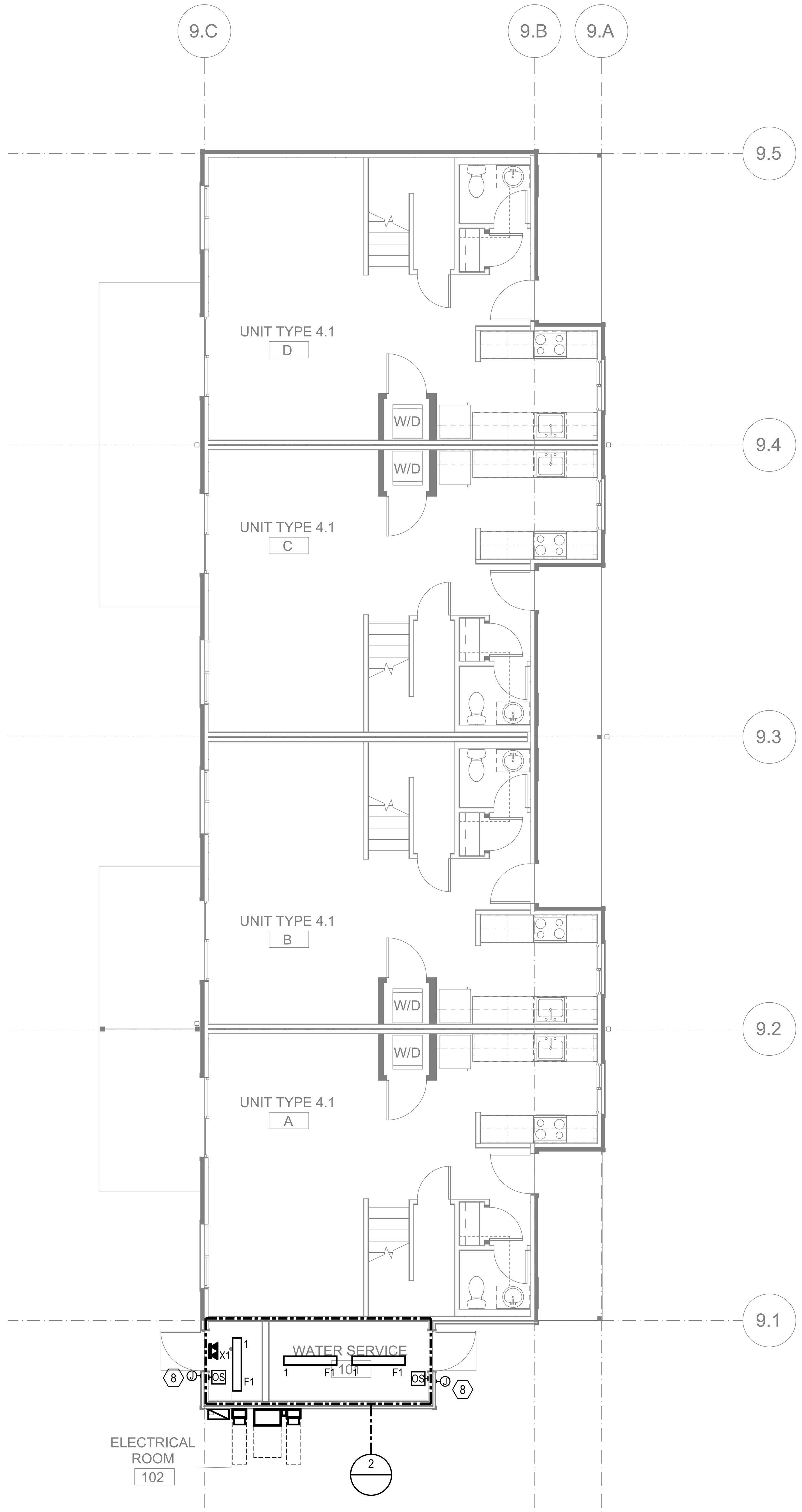
6. NOT USED.

7. NOT USED.

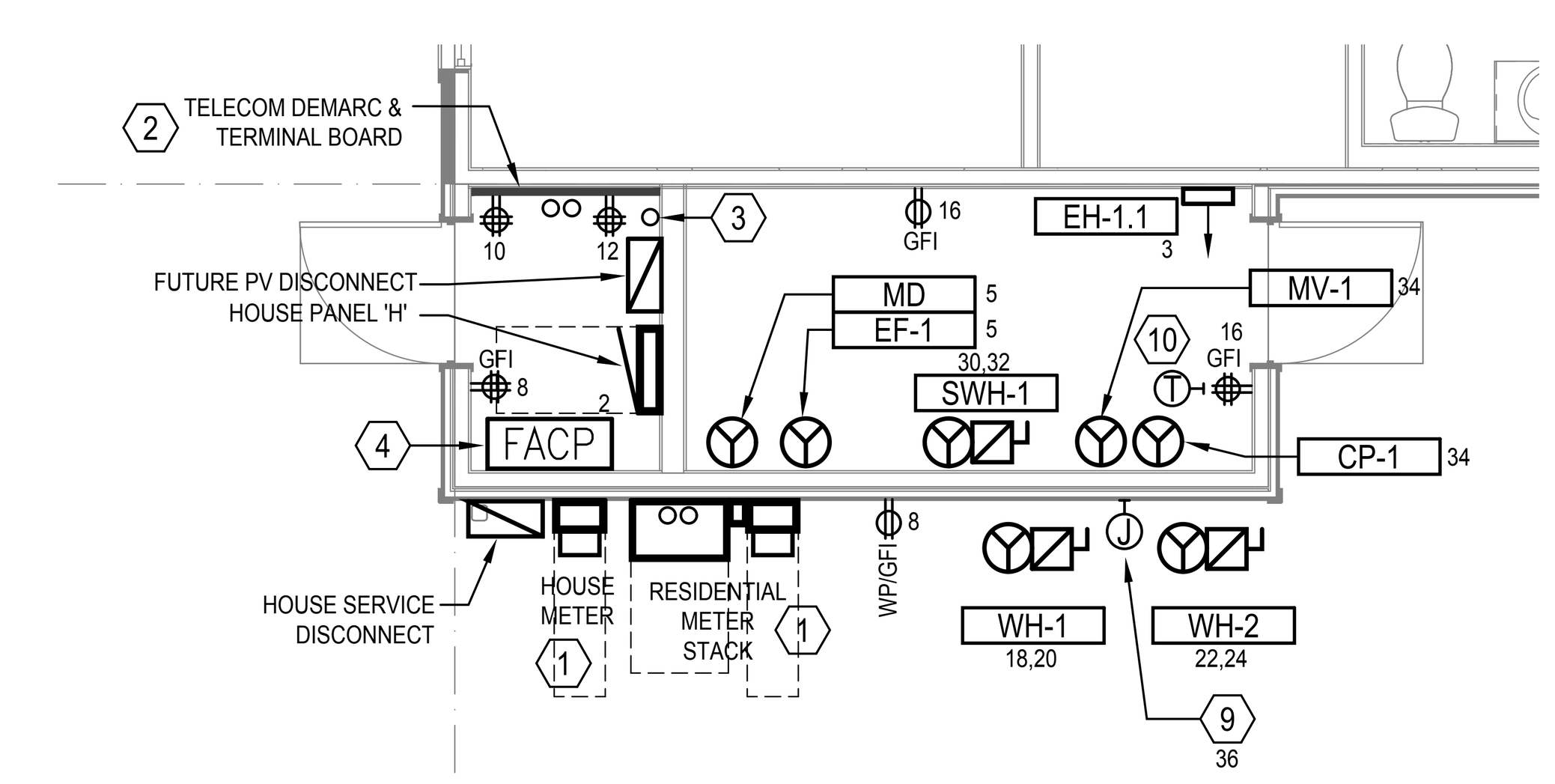
8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.

9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.

10. ELECTRICAL CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



POWER AND LIGHTING PLAN - BUILDING 19 - LEVEL 1
SCALE: 3/16"=1'-0"



2 / E-101 ELECTRICAL AND WATER ROOM
1/4"=1'-0"

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS
13317 NE 133rd St., Kirkland, WA 98034

BUILDING 19
BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

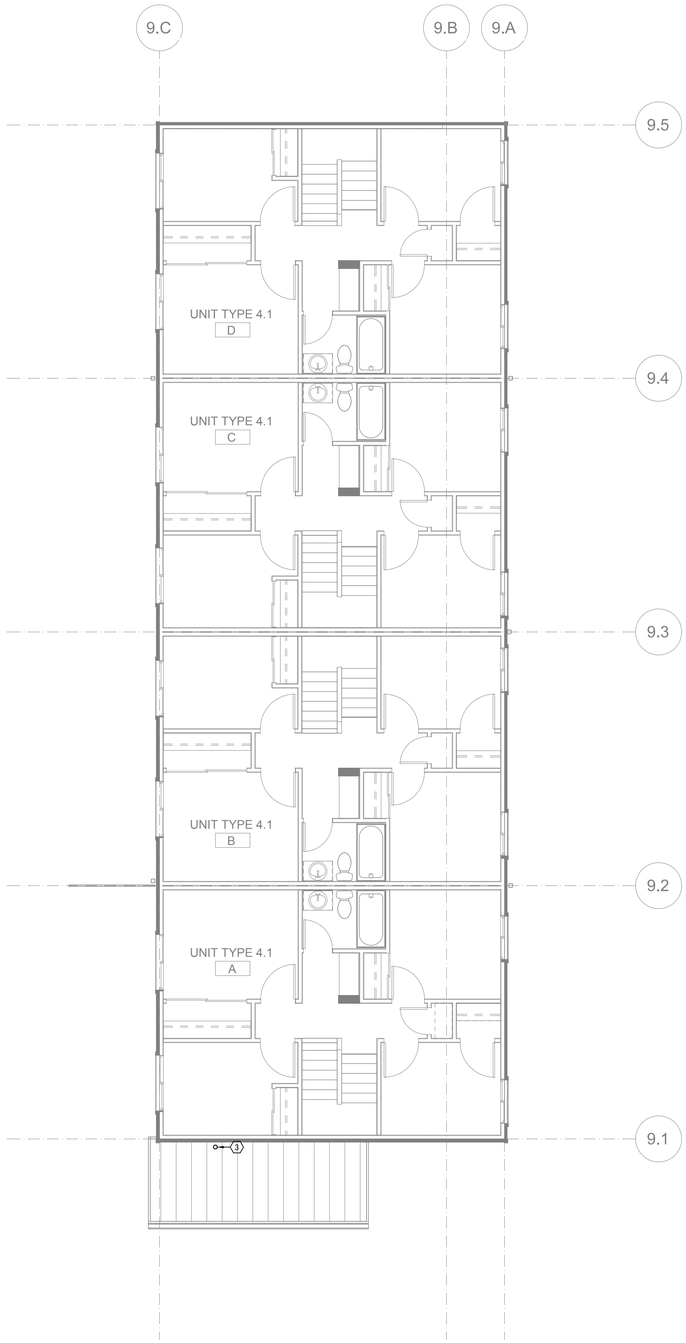
DPD STAMP

TITLE
POWER AND LIGHTING PLAN - BUILDING 19 - LEVEL 1

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E19-101

10/7/2021 7:33:34 AM



CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H19 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

POWER AND LIGHTING PLAN - BUILDING 19 - LEVEL 2

SCALE: 3/16"=1'-0"

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 19

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 19 - LEVEL 2

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016

SHEET NO.:

E19-102

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

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2. NOT USED.
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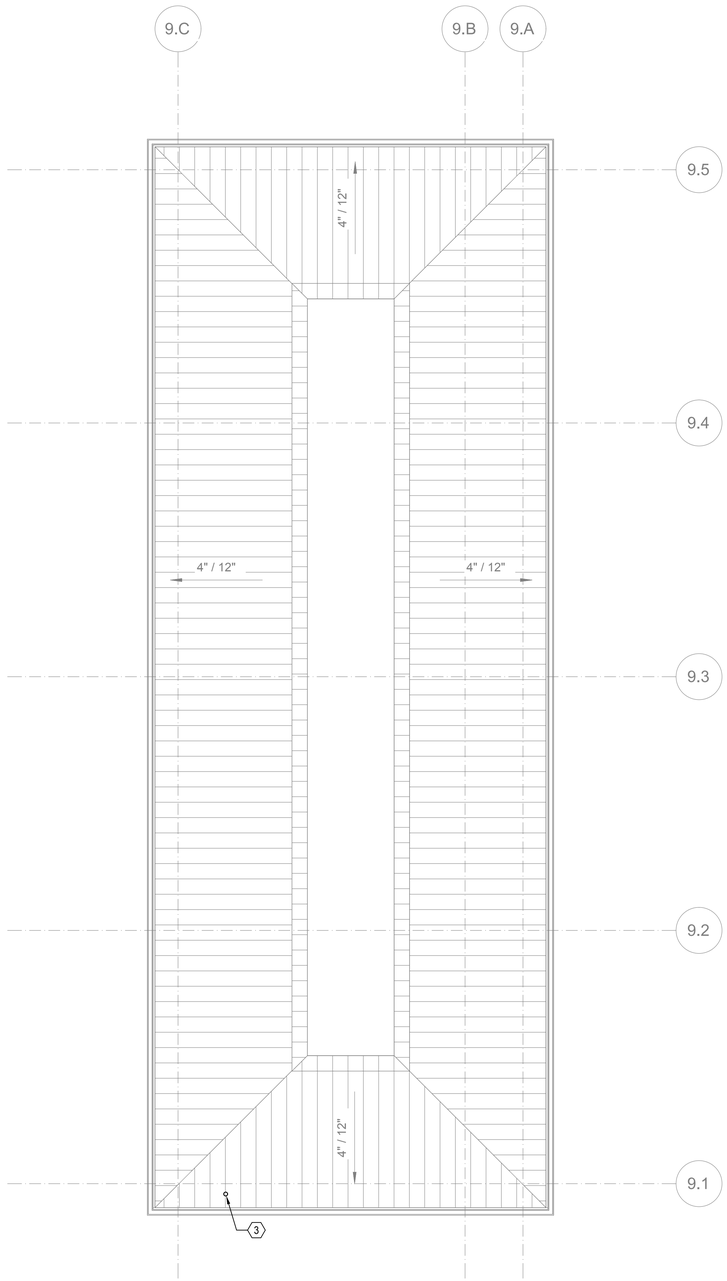

POWER PLAN - BUILDING 19 - ROOF

SCALE: 3/16"=1'-0"

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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BUILDING 19

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

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TITLE

POWER PLAN - BUILDING 19 - ROOF

PERMIT #	
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E19-103

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FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

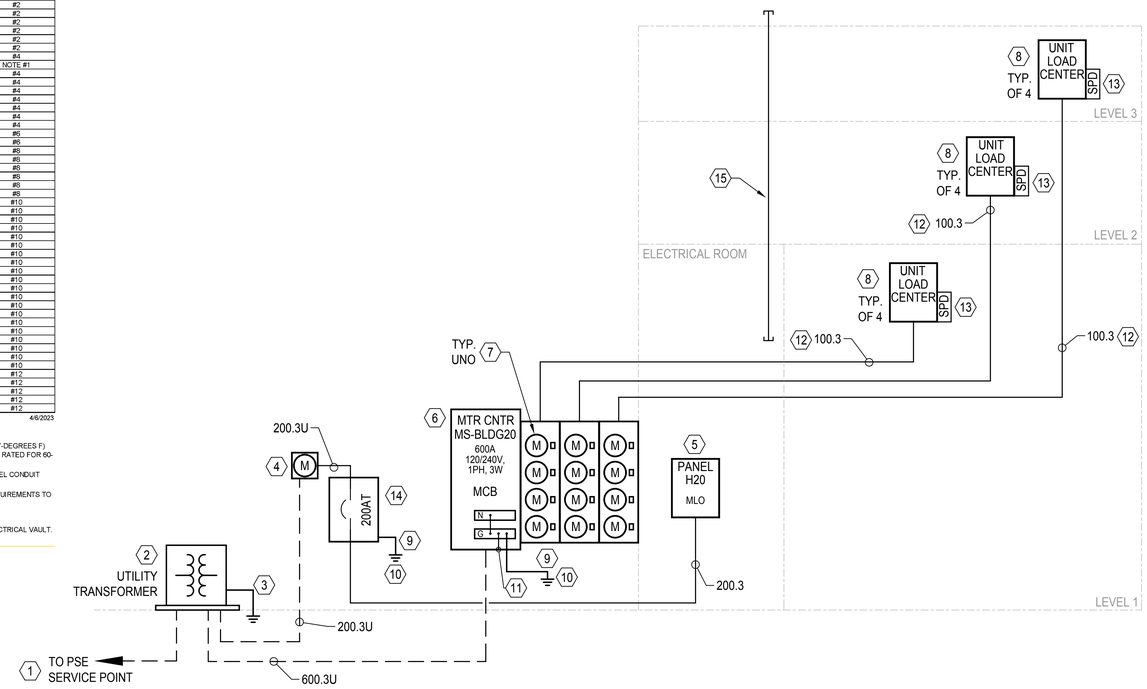
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE: NTS

FLAG NOTES ⓧ :

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (12) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 20

UNIT TYPE: 2BR - 2.1 | **AREA (SF): 782** | 4/6/2023

DEMAND LOAD (kVA): 17.93 => 74.7 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF		=	2.35	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	6.85	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:	100%		=	3.00	kVA
3,001VA - 120,000VA:	35%		=	1.35	kVA
> 120,000VA	25%		=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	**4.35**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:	75%				
		GENERAL APPLIANCE LOAD - DEMAND		=	**1.65 kVA**

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	**0.14 kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51]			=	3.91 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA

TOTAL DWELLING UNIT LOAD PER NEC 220, PART III	=	**23.54 kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.48 kVA
DEMAND FACTORS PER NEC 220.82(B):			
0 - 10kVA:	100%	=	10.00 kVA
> 10 kVA:	40%	=	5.39 kVA

ELECTRIC HEAT AND AC [220.82(C)]:

LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS, 65% NAMEPLATE	=	2.54 kVA
TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV		=	**17.93 kVA**

UNIT TYPE: 3BR - 3.1 | **AREA (SF): 906** | 4/6/2023

DEMAND LOAD (kVA): 18.49 => 77.0 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF		=	2.72	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	7.22	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:	100%		=	3.00	kVA
3,001VA - 120,000VA:	35%		=	1.48	kVA
> 120,000VA	25%		=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	**4.48**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:	75%				
		GENERAL APPLIANCE LOAD - DEMAND		=	**1.65 kVA**

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	**0.14 kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51]			=	4.53 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA

TOTAL DWELLING UNIT LOAD PER NEC 220, PART III	=	**24.29 kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.86 kVA
DEMAND FACTORS PER NEC 220.82(B):			
0 - 10kVA:	100%	=	10.00 kVA
> 10 kVA:	40%	=	5.54 kVA

ELECTRIC HEAT AND AC [220.82(C)]:

LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS, 65% NAMEPLATE	=	2.94 kVA
TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV		=	**18.49 kVA**

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL | **MS - 12 unit STACK** | 4/6/2023

DEMAND LOAD (kVA): 137.09 => 571.2 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING APPLIANCES 1.5< X < 3.5kW QTY	1.5< X < 3.5kW LOAD (kVA)	3.5kW < X < 8.75kW QTY	3.5kW < X < 8.75kW LOAD (kVA)	8.75kW < X < 12kW QTY	8.75kW < X < 12kW LOAD (kVA)
2BR - 2.1	6	41.08	13.20	0.66	23.46	6	33.00	0	0.00	0	0.00	6	52.80
3BR - 3.1	6	43.31	13.20	0.66	27.18	6	33.00	0	0.00	0	0.00	6	52.80
0								0	0.00	0	0.00	0	0.00
TOTALS:	12	84.38	26.40	1.32	50.64	12	66.00	0	0.00	0	0.00	12	105.60
ADDITIONAL 25% OF LARGEST MOTOR:				0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD	=	334.37 kVA
DEMAND FACTOR FROM TABLE 220.84 =		41%
TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC	=	**137.09 kVA**

KIRKLAND HEIGHTS - 12 UNIT STACK FLAT (REHAB)

PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 12):	137.09 kVA	
(SEE ATTACHED CALCS)		
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.		
RESIDENTIAL TOTAL:	137.09 kVA	
	571.22 AMPS @ 120/240V, 1-PHASE	
	PROVIDE 600A RESIDENTIAL METER CENTER	

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):		
LIGHTING - Breezeway +Interior:	1.5 kVA	
LIGHTING - SITE:	1.5 kVA	
GENERAL RECEPTACLES:	4.0 kVA	
MECHANICAL:	1.0 kVA	
ELECT HEAT (WATER RMS):	1.0 kVA	
CENTRAL HOT WATER (HPWH)	7.7 kVA	
ELECT SWING TANK	4.5 kVA	
HEAT TRACE	0.5 kVA	
MISCELLANEOUS:	2.5 kVA	
EV CHARGING (2):	16.6 kVA	
HOUSE TOTAL:	40.83 kVA	
	170.14 AMPS @ 120/240V, 1-PHASE	
WITH 25% SPARE CAPACITY	51.04 kVA	
	212.6708 AMPS @ 120/240V, 1-PHASE	
	PROVIDE 200A HOUSE SERVICE	
TOTAL BUILDING SERVICE:	188.13 kVA	
	783.89 AMPS @ 120/240V, 1-PHASE	

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 20

BID SET

JOHANNA M. [illegible] STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E20-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	CONDUCTORS PER SET: PHASE / NEUTRAL (N) (QTY) SIZE	CONDUCTORS PER SET: GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED: #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.

B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H20

NORMAL POWER — FED FROM: XFR — LOCATION: ELECTRICAL ROOM
VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
AIC: SEE SINGLE-LINE DIAGRAM — BUS RATING: 200 AMPS — MLO OR MCB: MLO 200 AMPS

CKT #	DESCRIPTION	CONN LOAD TYPE	CONN LOAD kVA	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	CONN LOAD TYPE	CONN LOAD kVA	DESCRIPTION	CKT #
1	LTG - BREEZEWAY	L	0.27	20.1	20 / 1	A	20 / 1	20.1	N	0.60	FIRE ALARM CONTROL PANEL	2
3	SPARE		0.00		20 / 1	B	20 / 1	20.1	N	0.24	LTG TIME CLOCK	4
5	RECEPT - LVL 1 BREEZEWAY	R	0.36	20.1	20 / 1	A	20 / 1			0.00	SPARE	6
7	RECEPT - LVL 2 BREEZEWAY	R	0.36	20.1	20 / 1	B	20 / 1	20.1	R	0.54	RECEPTS - ELECT RM	8
9	RECEPT - LVL 3 BREEZEWAY	R	0.36	20.1	20 / 1	A	20 / 1	20.1	R	0.72	RECEPTS - TELECOM	10
11	LTG - ELECT / MECH CLOSETS	L	0.24	20.1	20 / 1	B	20 / 1	20.1	R	0.36	RECEPTS - TELECOM	12
13	ELECT HEATER - FIRE SPRINKLER	C	1.50	20.1	20 / 1	A	20 / 1			0.00	SPARE	14
15	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.24	20.1	20 / 1	B	20 / 1	20.1	R	0.72	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - 'WH-1'	18
19	SPARE		0.00		20 / 1	B					"	20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20.1	20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - 'WH-2'	22
23	SPARE		0.00		20 / 1	B					"	24
25	LTG - SITE	L	0.20	20.1	20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - 'WH-3'	26
27	SPARE		0.00		20 / 1	B					"	28
29	SPACE ONLY					A	30 / 2	30.2N	C	4.50	WH SWING TANK- 'SWH-1'	30
31	SPACE ONLY					B					"	32
33	SPACE ONLY					A	20 / 1	20.1	N	0.36	CIRC PUMP 'CP-1' & MIX VALVE 'MV-1'	34
35	SPACE ONLY					B	20 / 1	20.1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

	CONNECTED LOAD	DEMAND FACTOR	DEMAND LOAD
L = LIGHTING	0.71 kVA	125%	0.89 kVA
R = RECEPTACLES	4.14 kVA	NEC 220.44	4.14 kVA
M = MOTORS	0.24 kVA	100%	0.24 kVA
PLUS 25% OF LARGEST MOTOR	0.24 kVA	25%	0.06 kVA
C = CONTINUOUS	11.18 kVA	125%	13.98 kVA
N = NON-CONTINUOUS	1.44 kVA	100%	1.44 kVA
K = KITCHEN	0.00 kVA	75%	0.00 kVA

PANEL CONNECTED TOTAL: 17.71 kVA, 73.81 AMPS

PANEL DEMAND TOTAL: 20.75 kVA, 86.45 AMPS

NOTES:

A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):

1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER.

LOAD CENTER - 2 BEDROOM

NORMAL POWER — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
AIC: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — MLO OR MCB: MLO 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN LTG. RECEPTS. SD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ERV, MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	DED RECEPT - AC UNIT (BY TENANT)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B				20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:

A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.

B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG

CIRCUIT NOTES (X):

1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

LOAD CENTER - 3 BEDROOM

NORMAL POWER — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
AIC: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — MLO OR MCB: MLO 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN LTG, RECEPTS. SD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ERV, MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS. LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:

A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.

B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):

1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS: VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-3	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-1	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.163					2
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS; CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES; DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM. COORDINATE EXACT REQUIRMEMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	240 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3

NOTES:

1. CONFIRM EXACT LOCATION WITH ARCHITECT.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 12 UNIT STACKED FLATS

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES: BED 1	BED 2	BED 3	LIVING
A	2-BDRM	CH-0.84	CH-0.7		CH-1.8
B	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
C	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
D	2-BDRM	CH-0.84	CH-0.7		CH-1.8
E	2-BDRM	CH-0.56	CH-0.56		CH-0.93
F	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
G	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
H	2-BDRM	CH-0.56	CH-0.56		CH-0.93
I	2-BDRM	CH-0.7	CH-0.56		CH-1.12
J	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
K	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
L	2-BDRM	CH-0.7	CH-0.56		CH-1.12

NOTES:

A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.

B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

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SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 20

BID SET

GEORGIANNA M. ... STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/630 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE
& SPECS FOR ALL 'S' LIGHTING FIXTURES.

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 20

BID SET

GEORGINNA M. LAMPSON
STATE OF WASHINGTON
43761
REGISTERED
PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES
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LUMINAIRE SCHEDULE

PERMIT #	
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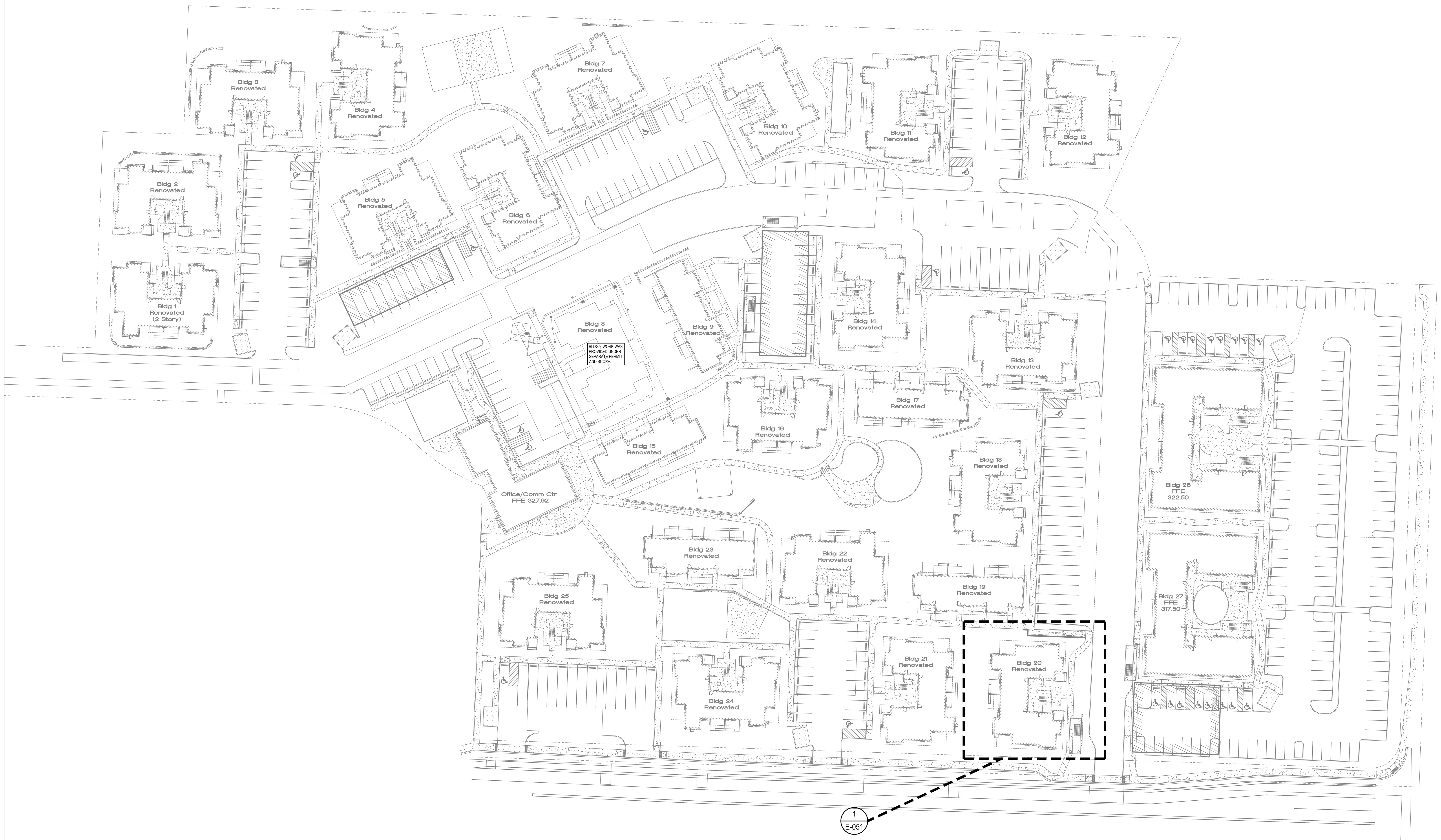
E20-005



OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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117 S. Main St., Suite 400
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FX: 206.623.5285

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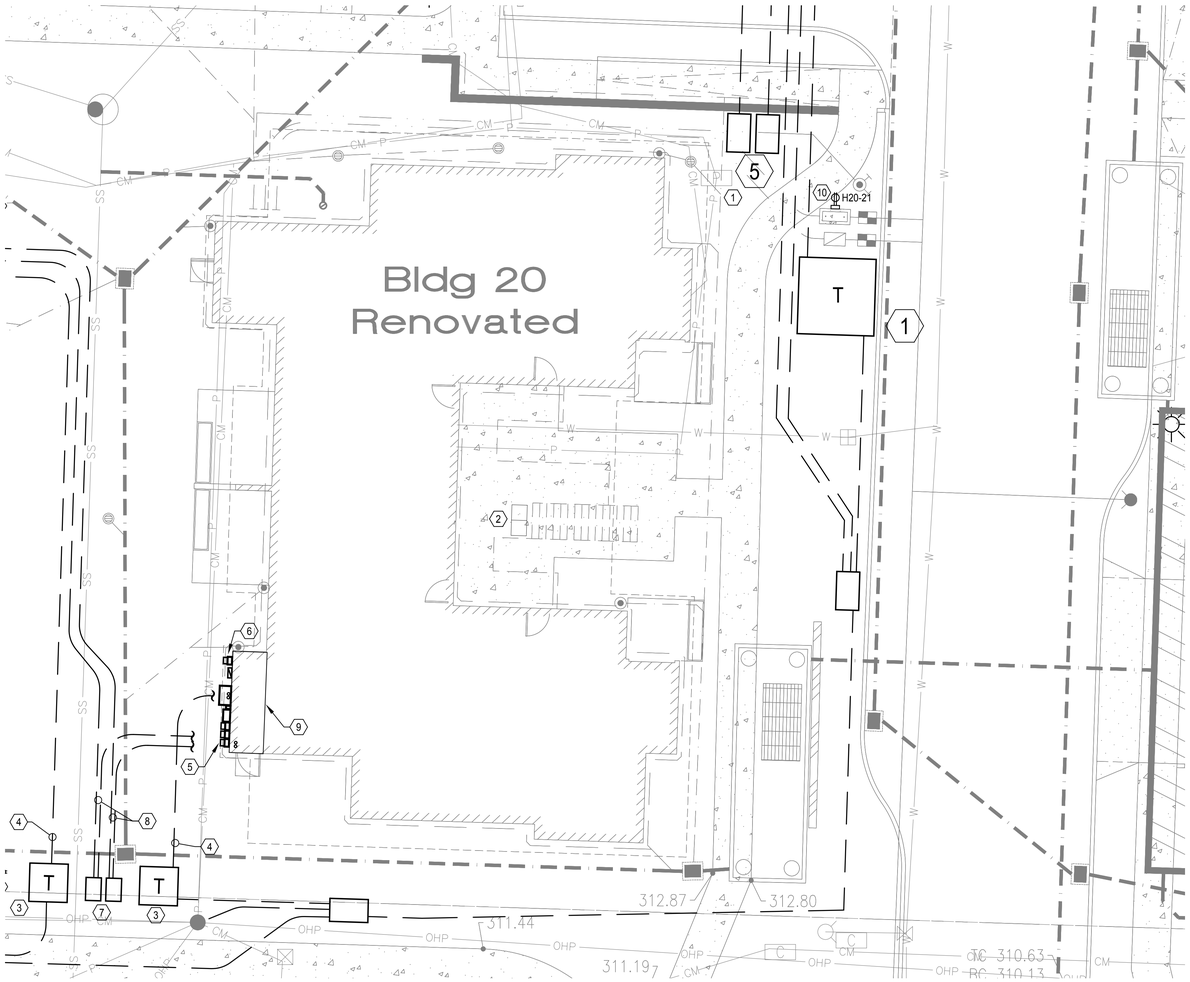

ELECTRICAL SITE PLAN - BUILDING 20
SCALE: 1/8" = 1'-0"

FLAG NOTES (X):

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

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Seattle, WA 98104

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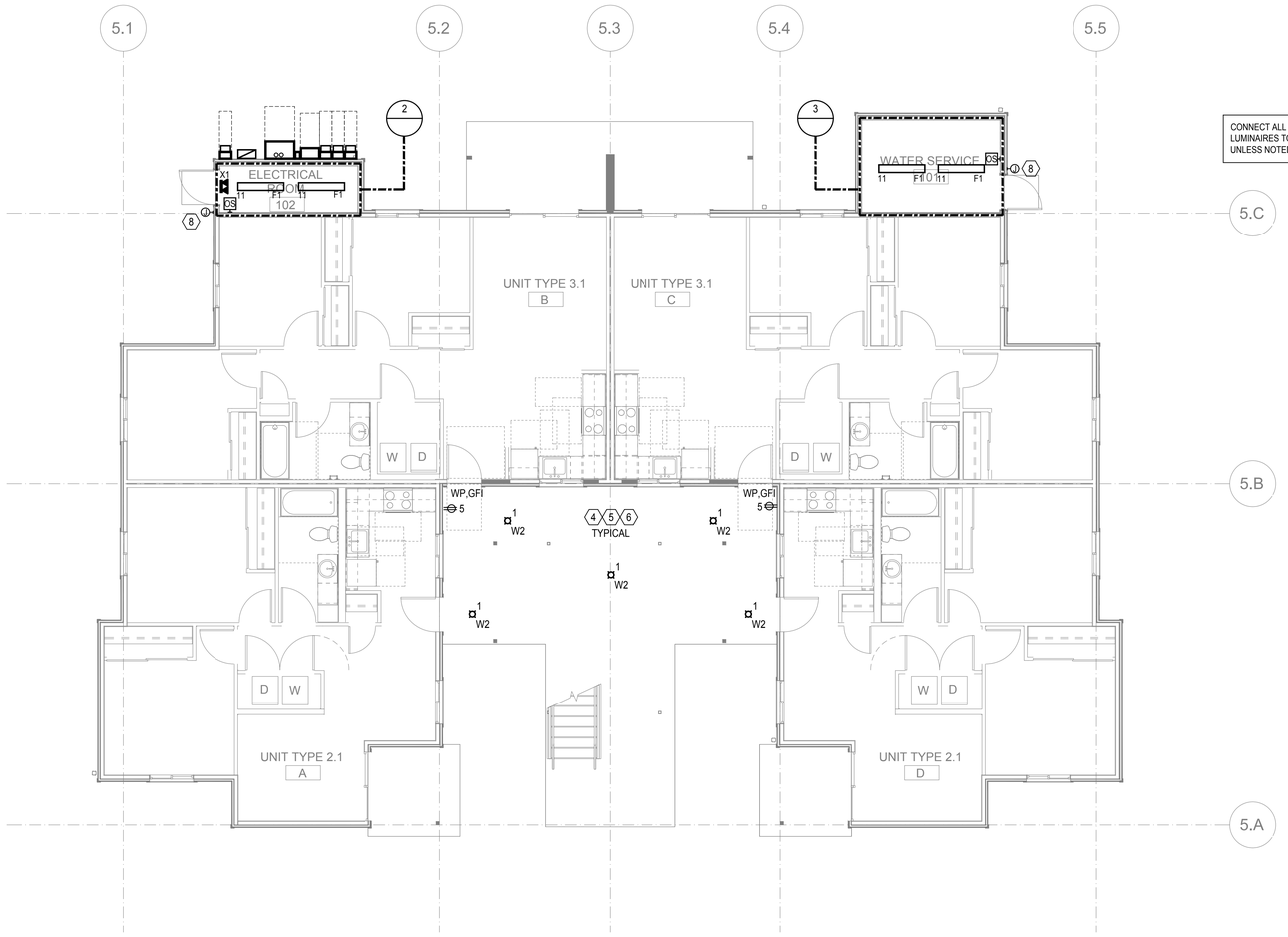


CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H20 UNLESS NOTED OTHERWISE.

POWER AND LIGHTING PLAN - BUILDING 20 - LEVEL 1

SCALE: 3/16"=1'-0"

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

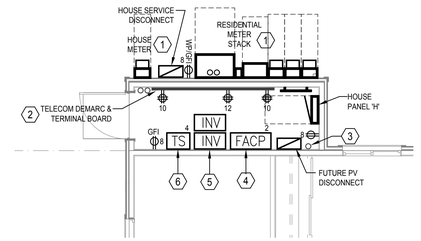
B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

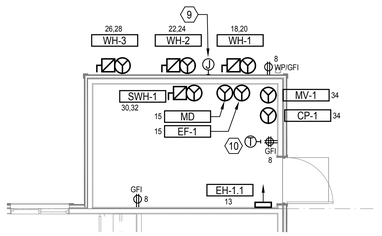
D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.
2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-375-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.
7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.
8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.
10. CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



2 E-101 **ELECTRICAL ROOM**
1/4"=1'-0"



3 E-101 **WATER ROOM**
1/4"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 20

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 20 - LEVEL 1

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E20-101

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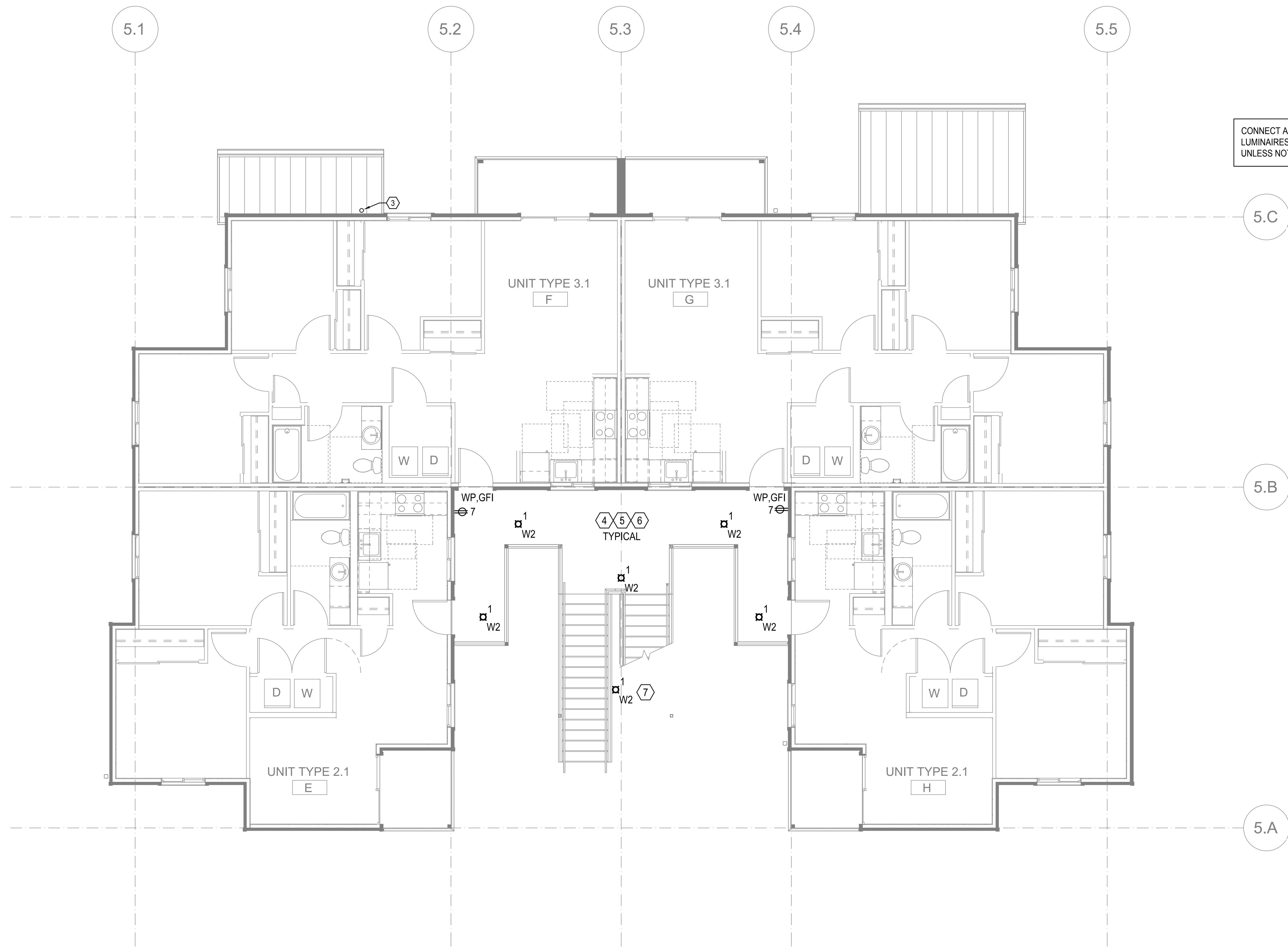
ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H20 UNLESS NOTED OTHERWISE.



POWER AND LIGHTING PLAN - BUILDING 20 - LEVEL 2

SCALE: 3/16"=1'-0"

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES ⟨X⟩:

1. NOT USED
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 20

BID SET

GEORGINNA M. LUCAS · STATE OF WASHINGTON · 43761 · REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 20 - LEVEL 2

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

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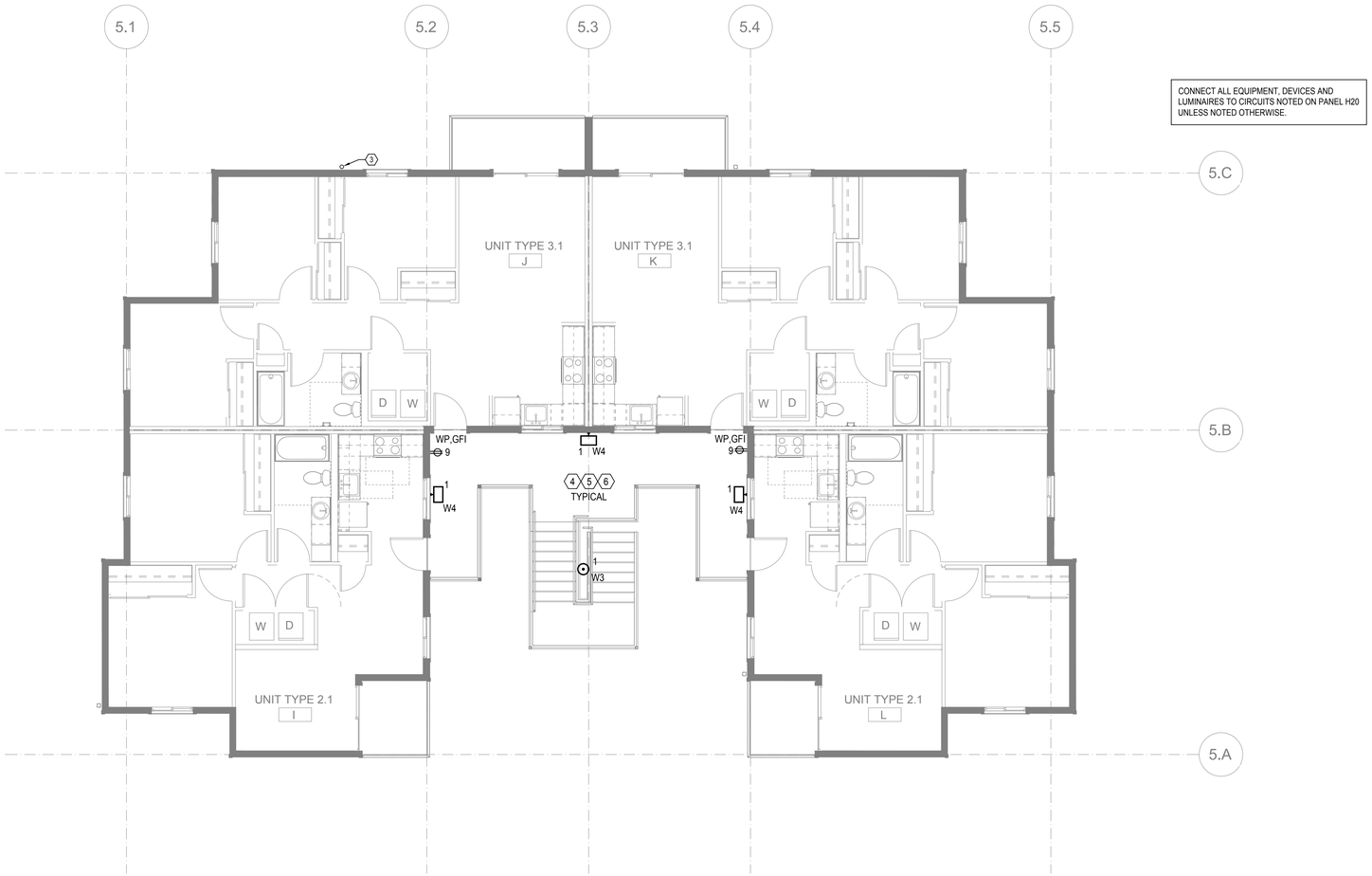
10/7/2021 7:33:34 AM



CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H20 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

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POWER AND LIGHTING PLAN - BUILDING 20 - LEVEL 3

SCALE: 3/16"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
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King County Housing Authority

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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 20

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 20 - LEVEL 3

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E20-103

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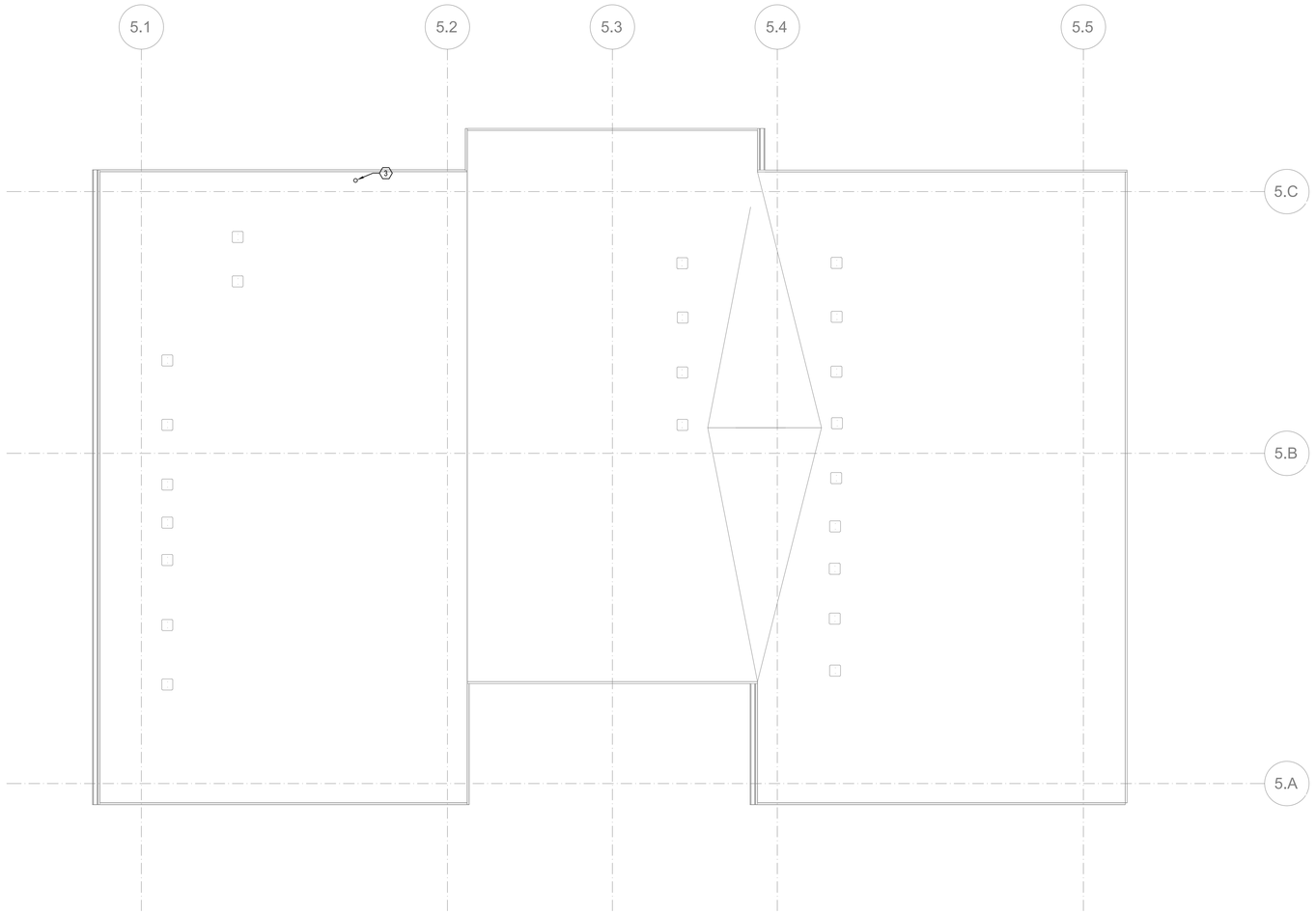

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POWER PLAN - BUILDING 20 - ROOF

SCALE: 3/16"=1'-0"

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Kirkland, WA 98034

BUILDING 20

BID SET

GEORGINNA M. LAWSON
STATE OF WASHINGTON
43761
REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER PLAN - BUILDING 20 - ROOF

PERMIT #	
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CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016

SHEET NO.:

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FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION);
CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

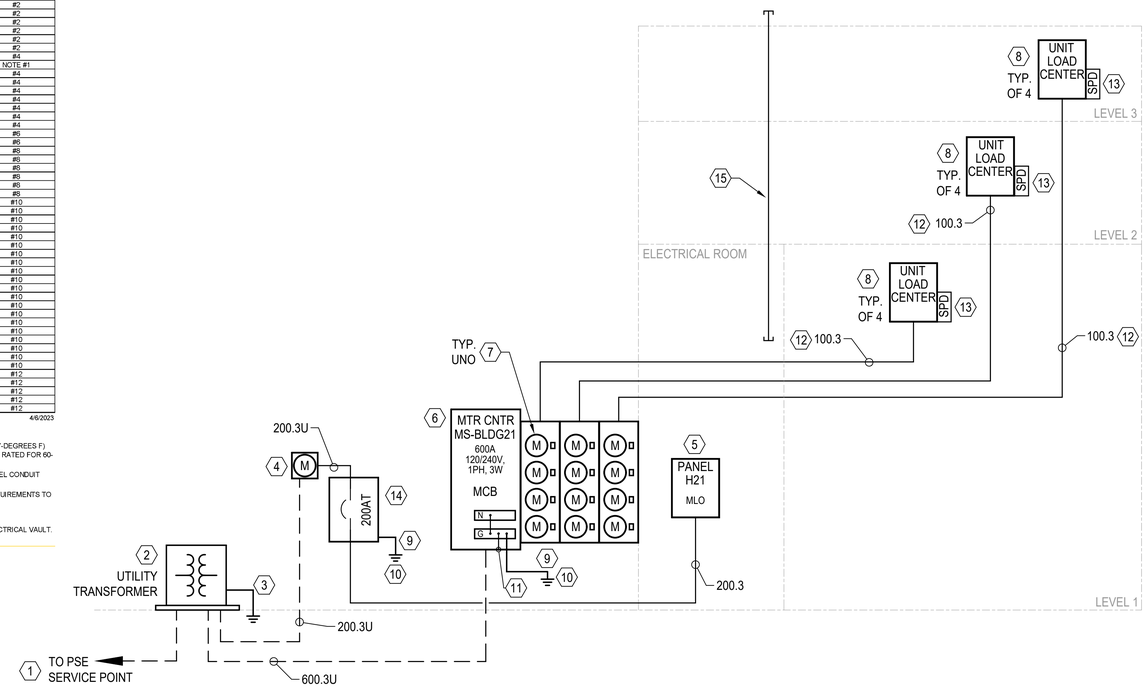
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE: NTS

FLAG NOTES (X):

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (12) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 21

UNIT TYPE: 2BR - 2.1 | **AREA (SF): 782** | 4/6/2023

DEMAND LOAD (kVA): 17.93 => 74.7 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =		AREA x 3VA/SF	=	2.35	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	6.85	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:		100%	=	3.00	kVA
3,001VA - 120,000VA:		35%	=	1.35	kVA
> 120,000VA		25%	=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	**4.35**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:		75%			
		GENERAL APPLIANCE LOAD - DEMAND		=	**1.65 kVA**

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	**0.14 kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51] = 3.91 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA

TOTAL DWELLING UNIT LOAD PER NEC 220, PART III = 23.54 kVA

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]			=	23.48 kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10KVA:		100%	=	10.00 kVA
> 10 KVA:		40%	=	5.39 kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS, 65% NAMEPLATE		=	2.54 kVA

TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV = 17.93 kVA

UNIT TYPE: 3BR - 3.1 | **AREA (SF): 906** | 4/6/2023

DEMAND LOAD (kVA): 18.49 => 77.0 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =		AREA x 3VA/SF	=	2.72	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	7.22	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:		100%	=	3.00	kVA
3,001VA - 120,000VA:		35%	=	1.48	kVA
> 120,000VA		25%	=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	**4.48**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:		75%			
		GENERAL APPLIANCE LOAD - DEMAND		=	**1.65 kVA**

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	**0.14 kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51] = 4.53 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA

TOTAL DWELLING UNIT LOAD PER NEC 220, PART III = 24.29 kVA

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]			=	23.86 kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10KVA:		100%	=	10.00 kVA
> 10 KVA:		40%	=	5.54 kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS, 65% NAMEPLATE		=	2.94 kVA

TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV = 18.49 kVA

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL | **MS - 12 unit STACK** | 4/6/2023

DEMAND LOAD (kVA): 137.09 => 571.2 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING APPLIANCES 1.5< X < 3.5kW QTY	1.5< X < 3.5kW LOAD (kVA)	3.5kW < X < 8.75kW QTY	3.5kW < X < 8.75kW LOAD (kVA)	8.75kW < X < 12kW QTY	8.75kW < X < 12kW LOAD (kVA)
2BR - 2.1	6	41.08	13.20	0.66	23.46	6	33.00	0	0.00	0	0.00	6	52.80
3BR - 3.1	6	43.31	13.20	0.66	27.18	6	33.00	0	0.00	0	0.00	6	52.80
0								0	0.00	0	0.00	0	0.00
TOTALS:	12	84.38	26.40	1.32	50.64	12	66.00	0	0.00	0	0.00	12	105.60
ADDITIONAL 25% OF LARGEST MOTOR:				0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD = 334.37 kVA
DEMAND FACTOR FROM TABLE 220.84 = 41%

TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC = 137.09 kVA

KIRKLAND HEIGHTS - 12 UNIT STACK FLAT (REHAB)
PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 12):	137.09 kVA	
(SEE ATTACHED CALCS)		
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.		
RESIDENTIAL TOTAL:	137.09 kVA	
	571.22 AMPS @ 120/240V, 1-PHASE	
	PROVIDE 600A RESIDENTIAL METER CENTER	

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):		
LIGHTING - Breezeway +Interior:	1.5 kVA	
LIGHTING - SITE:	1.5 kVA	
GENERAL RECEPTACLES:	4.0 kVA	
MECHANICAL:	1.0 kVA	
ELECT HEAT (WATER RMS):	1.0 kVA	
CENTRAL HOT WATER (HPWH)	7.7 kVA	
ELECT SWING TANK	4.5 kVA	
HEAT TRACE	0.5 kVA	
MISCELLANEOUS:	2.5 kVA	
EV CHARGING (2):	16.6 kVA	
HOUSE TOTAL:	40.83 kVA	
	170.14 AMPS @ 120/240V, 1-PHASE	
WITH 25% SPARE CAPACITY	51.04 kVA	
	212.6708 AMPS @ 120/240V, 1-PHASE	
	PROVIDE 200A HOUSE SERVICE	
TOTAL BUILDING SERVICE:	188.13 kVA	
	783.89 AMPS @ 120/240V, 1-PHASE	

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 21

BID SET

JOHANNA M. [illegible] STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E21-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	CONDUCTORS PER SET: PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION);
CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED: #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.

B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H21

FED FROM: XFR — LOCATION: ELECTRICAL ROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
AIC: SEE SINGLE-LINE DIAGRAM — BUS RATING: 200 AMPS — MLO OR MCB: MLO 200 AMPS

CKT #	DESCRIPTION	CONN LOAD TYPE	CONN LOAD kVA	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	CONN LOAD TYPE	CONN LOAD kVA	DESCRIPTION	CKT #
1	LTG - BREEZEWAY	L	0.27	20.1	20 / 1	A	20 / 1	20.1	N	0.60	FIRE ALARM CONTROL PANEL	2
3	SPARE		0.00		20 / 1	B	20 / 1	20.1	N	0.24	LTG TIME CLOCK	4
5	RECEPT - LVL 1 BREEZEWAY	R	0.36	20.1	20 / 1	A	20 / 1			0.00	SPARE	6
7	RECEPT - LVL 2 BREEZEWAY	R	0.36	20.1	20 / 1	B	20 / 1	20.1	R	0.54	RECEPTS - ELECT RM	8
9	RECEPT - LVL 3 BREEZEWAY	R	0.36	20.1	20 / 1	A	20 / 1	20.1	R	0.72	RECEPTS - TELECOM	10
11	LTG - ELECT / MECH CLOSETS	L	0.24	20.1	20 / 1	B	20 / 1	20.1	R	0.36	RECEPTS - TELECOM	12
13	ELECT HEATER - FIRE SPRINKLER	C	1.50	20.1	20 / 1	A	20 / 1			0.00	SPARE	14
15	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.24	20.1	20 / 1	B	20 / 1	20.1	R	0.72	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - 'WH-1'	18
19	SPARE		0.00		20 / 1	B					"	20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20.1	20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - 'WH-2'	22
23	SPARE		0.00		20 / 1	B					"	24
25	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - 'WH-3'	26
27	LTG - SITE POLES	L	0.23	20.1	20 / 1	B					"	28
29	SPACE ONLY					A	30 / 2	30.2N	C	4.50	WH SWING TANK - 'SWH-1'	30
31	SPACE ONLY					B					"	32
33	SPACE ONLY					A	20 / 1	20.1	N	0.36	CIRC PUMP 'CP-1' & MIX VALVE 'MV-1'	34
35	SPACE ONLY					B	20 / 1	20.1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

	CONNECTED LOAD	DEMAND FACTOR	DEMAND LOAD
L = LIGHTING	0.74 kVA	125%	0.93 kVA
R = RECEPTACLES	4.14 kVA	NEC 220.44	4.14 kVA
M = MOTORS	0.24 kVA	100%	0.24 kVA
PLUS 25% OF LARGEST MOTOR	0.24 kVA	25%	0.06 kVA
C = CONTINUOUS	11.18 kVA	125%	13.98 kVA
N = NON-CONTINUOUS	1.44 kVA	100%	1.44 kVA
K = KITCHEN	0.00 kVA	75%	0.00 kVA

PANEL CONNECTED TOTAL: 17.74 kVA, 73.93 AMPS

PANEL DEMAND TOTAL: 20.79 kVA, 86.60 AMPS

NOTES:
A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER.

LOAD CENTER - 2 BEDROOM

FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
AIC: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — MLO OR MCB: MLO 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN LTG. RECEPTS. SD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ERV, MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	DED RECEPT - AC UNIT (BY TENANT)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B				20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

LOAD CENTER - 3 BEDROOM

FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
AIC: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — MLO OR MCB: MLO 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN LTG, RECEPTS. SD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ERV, MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR EXHAUST HOOD (2)	20.1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS. LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS: VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-3	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-1	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.163					2
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS; CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES; DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM. COORDINATE EXACT REQUIRMEMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	240 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3

NOTES:
1. CONFIRM EXACT LOCATION WITH ARCHITECT.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 12 UNIT STACKED FLATS

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES: BED 1	BED 2	BED 3	LIVING
A	2-BDRM	CH-0.84	CH-0.7		CH-1.8
B	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
C	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
D	2-BDRM	CH-0.84	CH-0.7		CH-1.8
E	2-BDRM	CH-0.56	CH-0.56		CH-0.93
F	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
G	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
H	2-BDRM	CH-0.56	CH-0.56		CH-0.93
I	2-BDRM	CH-0.7	CH-0.56		CH-1.12
J	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
K	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
L	2-BDRM	CH-0.7	CH-0.56		CH-1.12

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.

B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 21

BID SET

REVISIONS / NOTES

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/630 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE
& SPECS FOR ALL 'S' LIGHTING FIXTURES.

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SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

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New Kirkland Heights LLLP
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General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 21

BID SET

GEORGINNA M. TAYLOR
STATE OF WASHINGTON
43761
REGISTERED
PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

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LUMINAIRE SCHEDULE

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DRAWN	RA, JF
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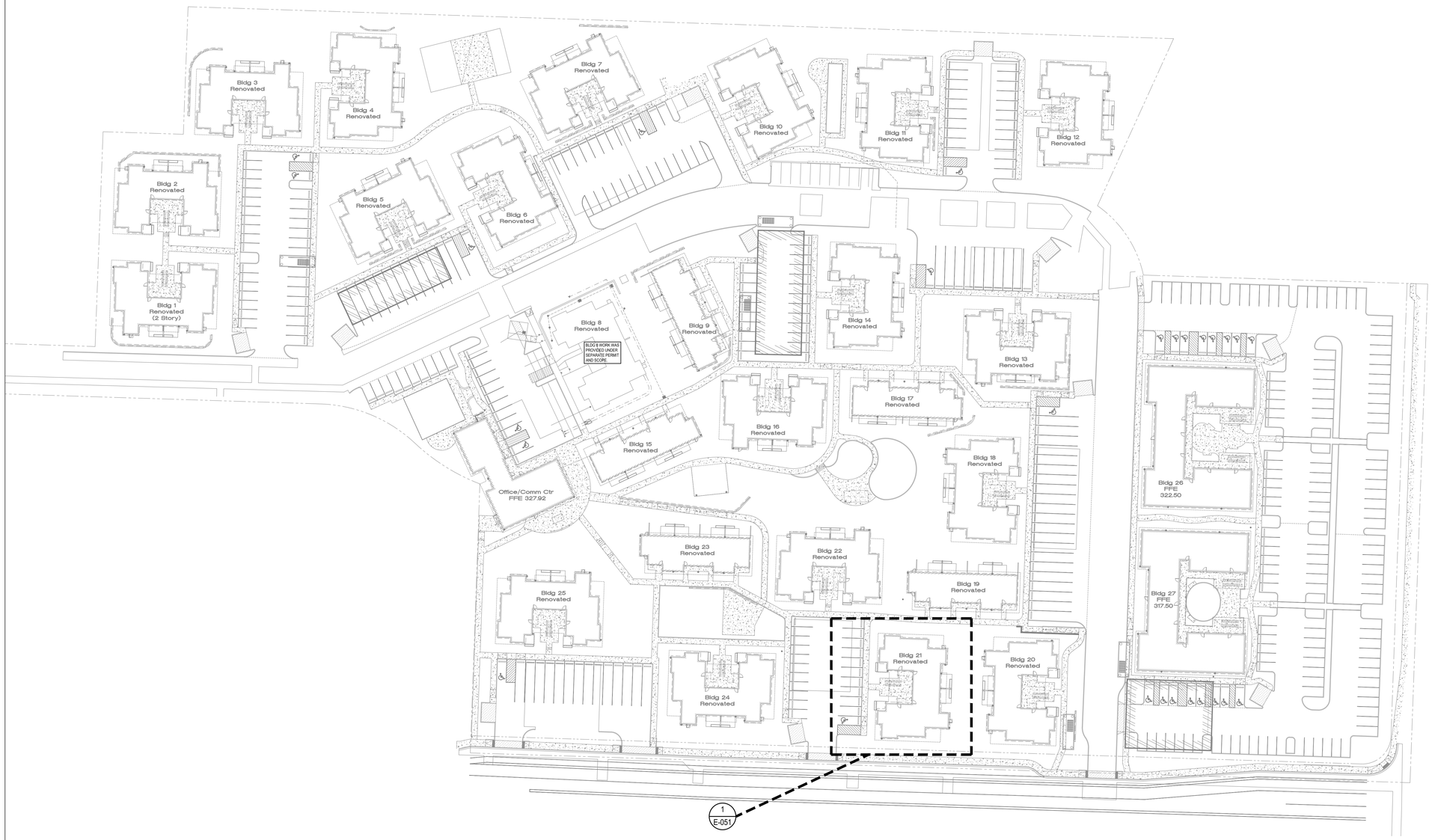

OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

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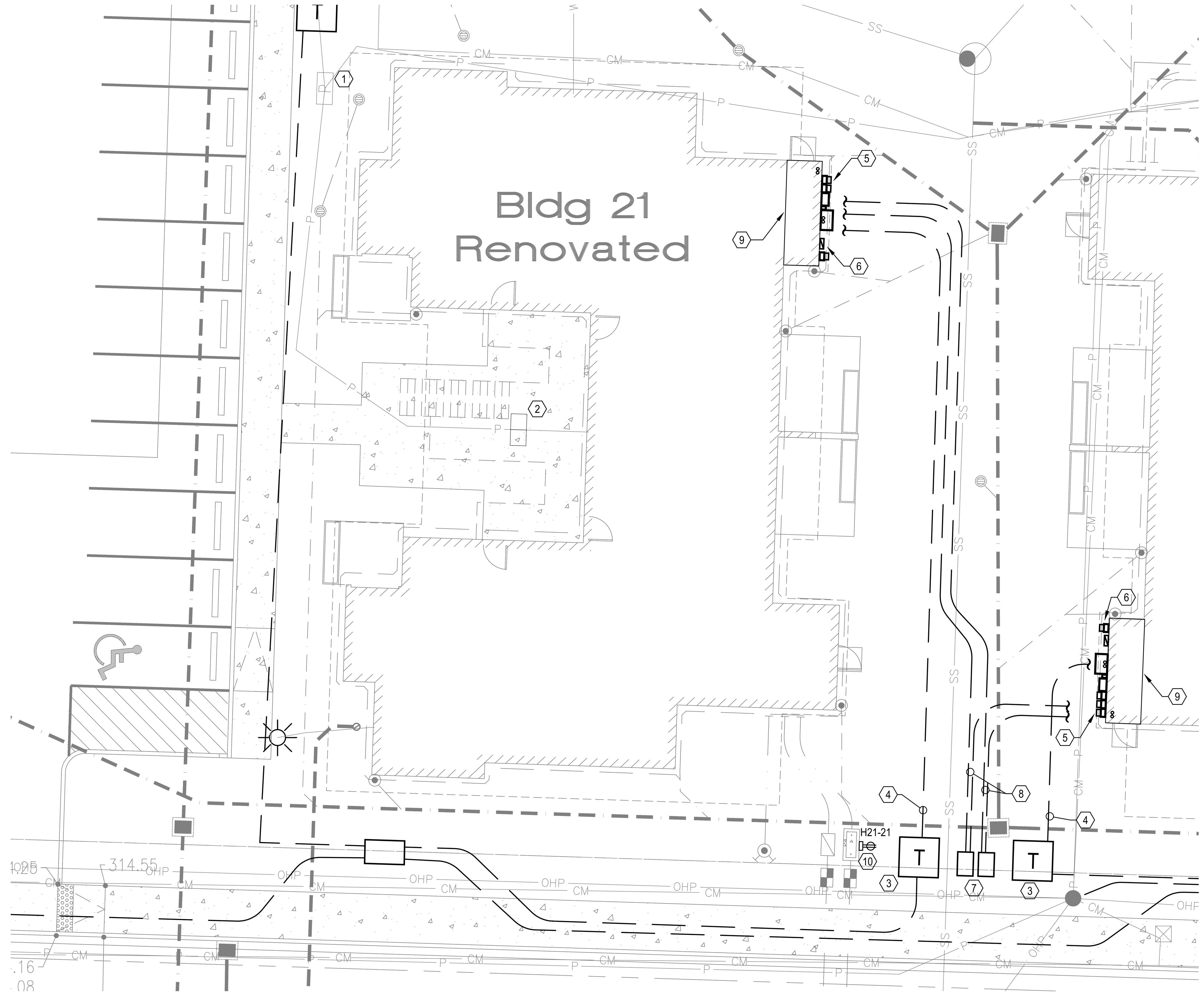
ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.



ELECTRICAL SITE PLAN - BUILDING 21

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

FLAG NOTES ⟨X⟩:

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
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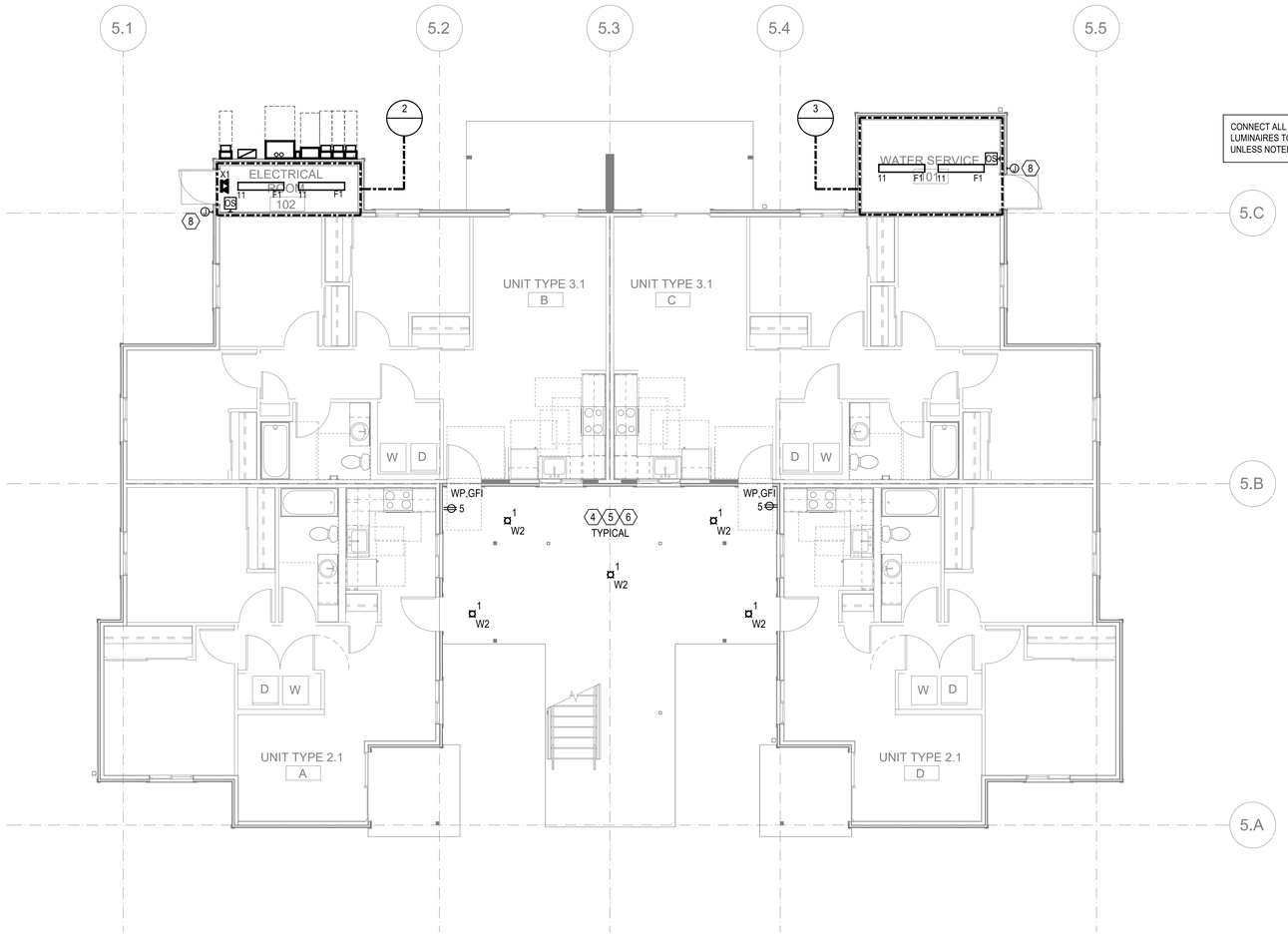


CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H21 UNLESS NOTED OTHERWISE.

POWER AND LIGHTING PLAN - BUILDING 21 - LEVEL 1

SCALE: 3/16"=1'-0"

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

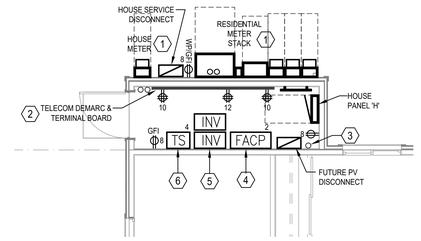
B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

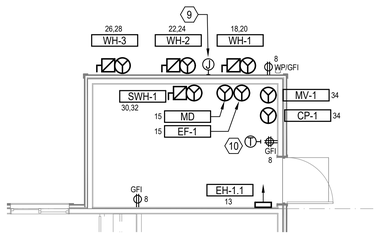
D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.
2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-375-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.
7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.
8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.
10. CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



2 E-101 **ELECTRICAL ROOM**
1/4"=1'-0"



3 E-101 **WATER ROOM**
1/4"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 21

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 21 - LEVEL 1

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E21-101

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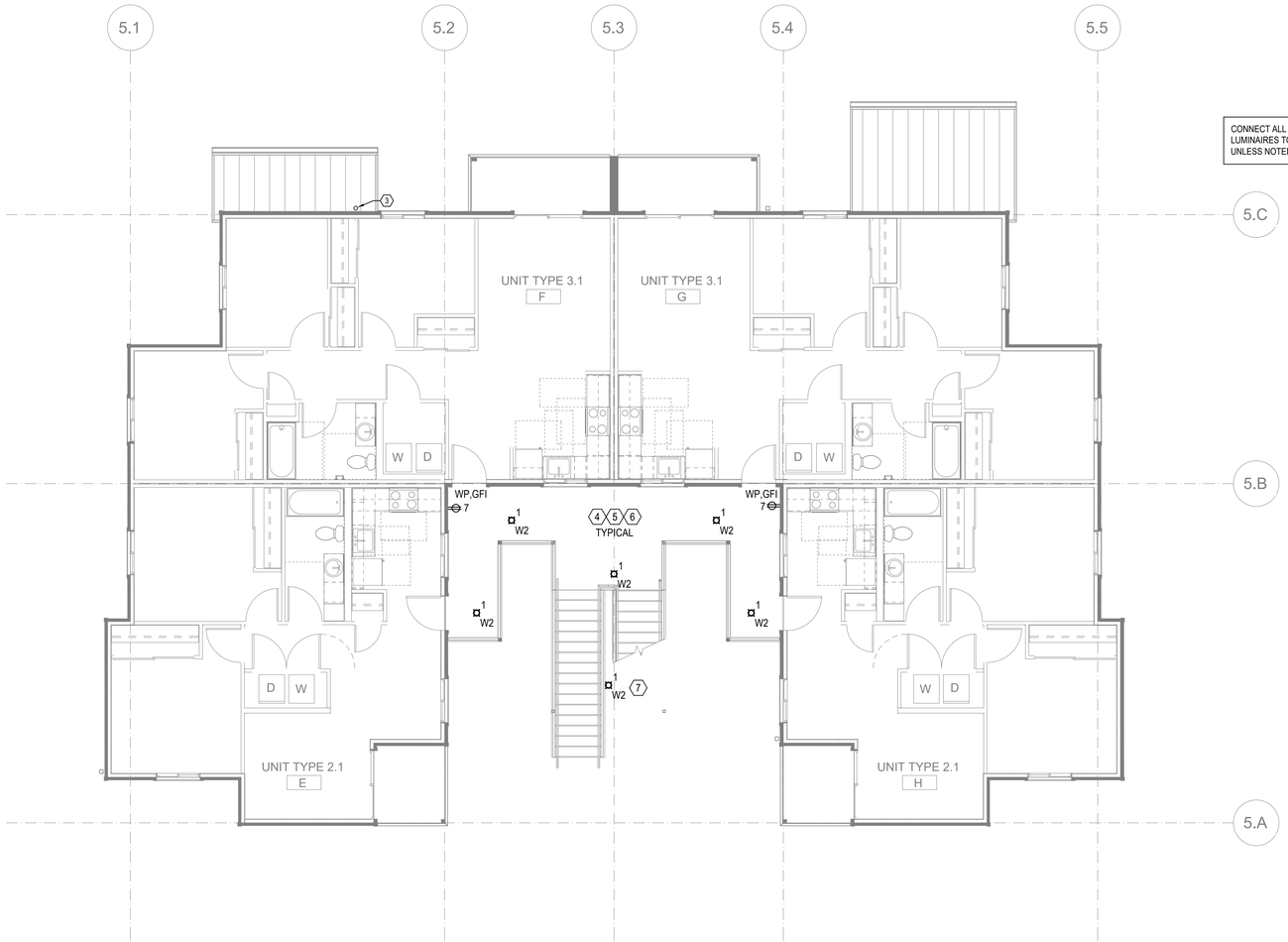

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H21 UNLESS NOTED OTHERWISE.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-375-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.
7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.

POWER AND LIGHTING PLAN - BUILDING 21 - LEVEL 2

SCALE: 3/16"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
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PH: 206.623.1104
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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 21

BID SET

JEONGINA M. LEE — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 21 - LEVEL 2

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

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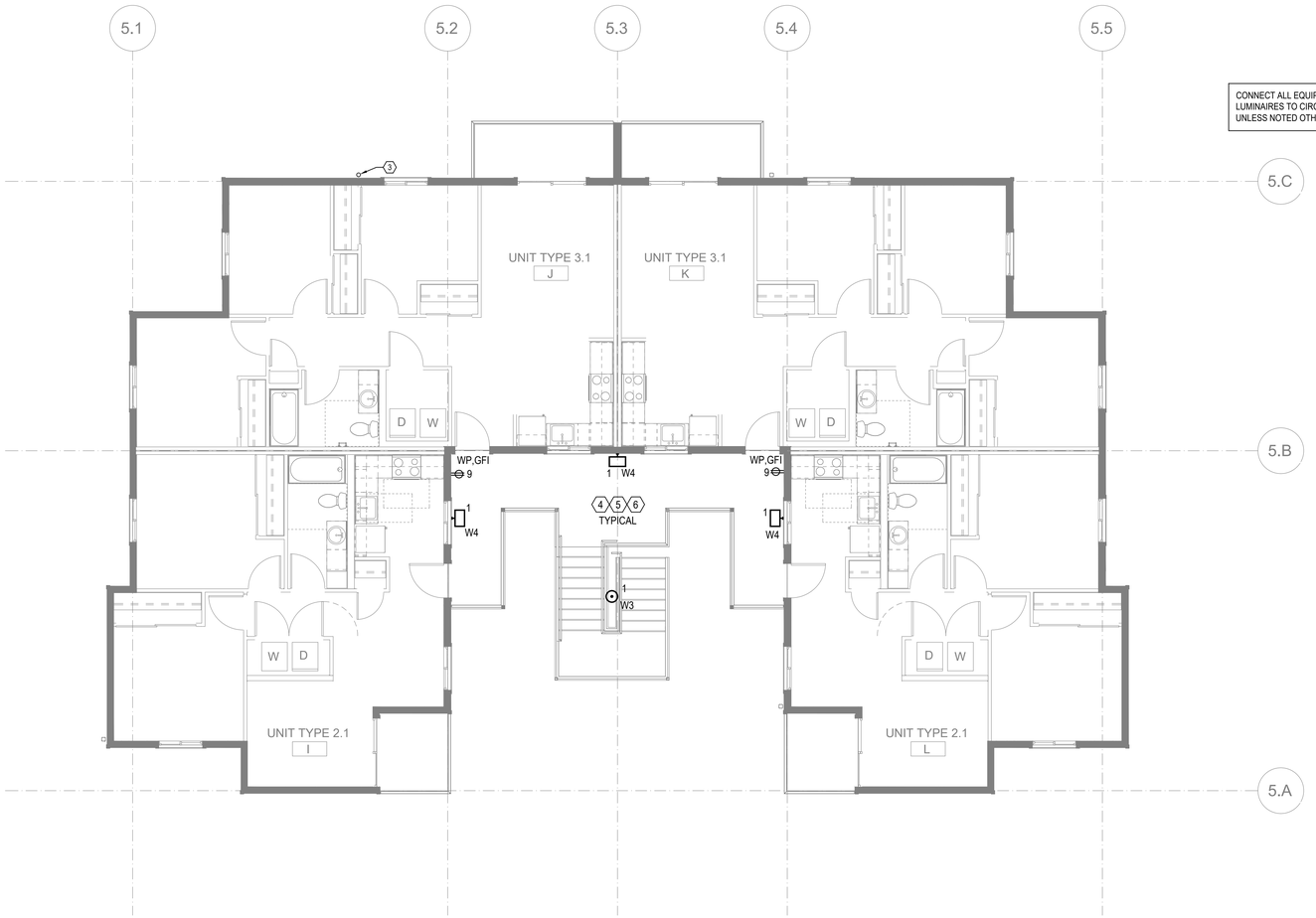

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H21 UNLESS NOTED OTHERWISE.

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SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

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POWER AND LIGHTING PLAN - BUILDING 21 - LEVEL 3

SCALE: 3/16"=1'-0"

10/7/2021 1:33:34 AM

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 21

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

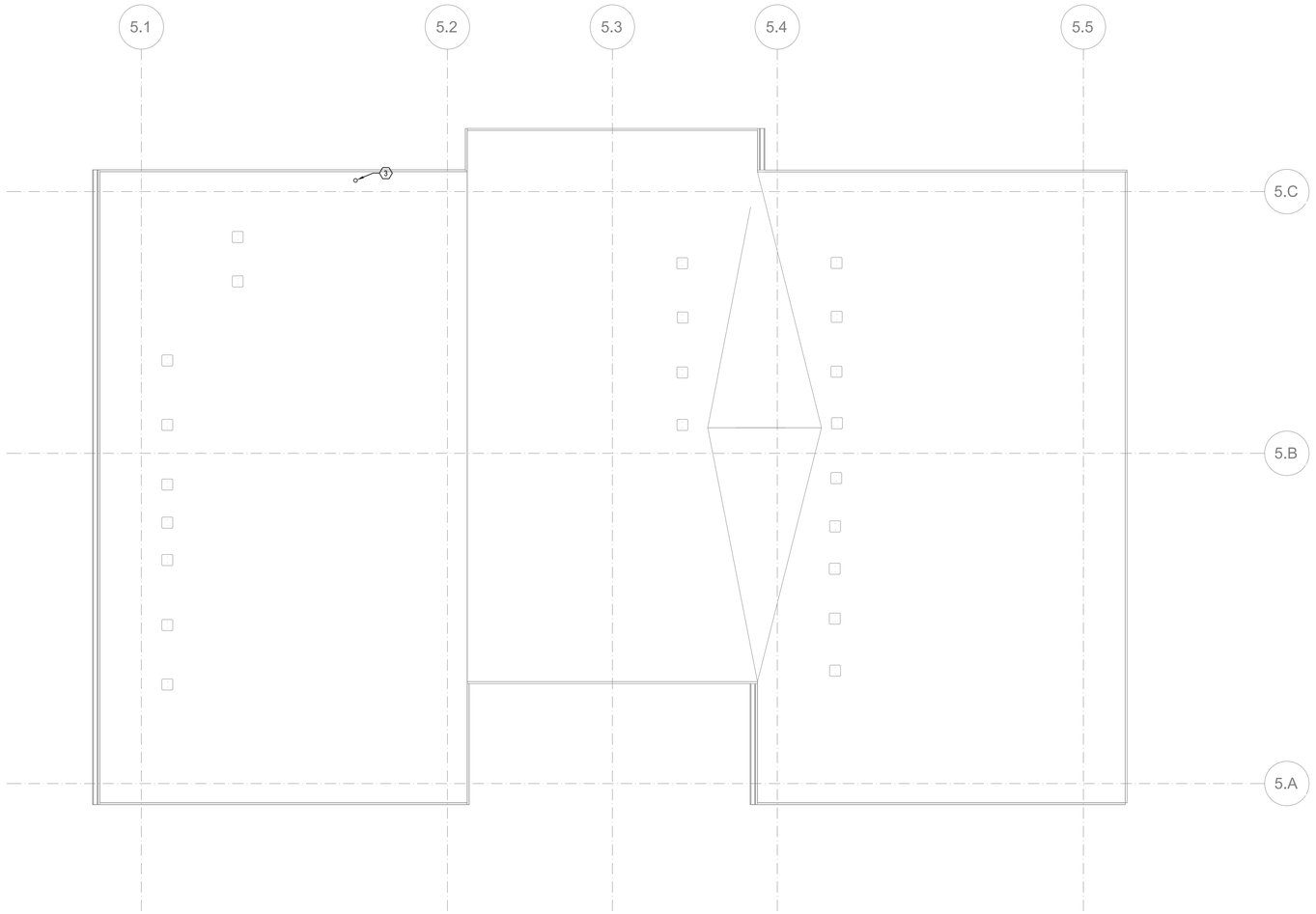
DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 21 - LEVEL 3

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E21-103



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POWER PLAN - BUILDING 21 - ROOF

SCALE: 3/16"=1'-0"

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 21

BID SET

GEORGINNA M. LABRECQUE
STATE OF WASHINGTON
43761
REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

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POWER PLAN - BUILDING 21 - ROOF

PERMIT #	
DRAWN	RA, JF
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E21-104

FEEDER/ CIRCUIT SCHEDULE

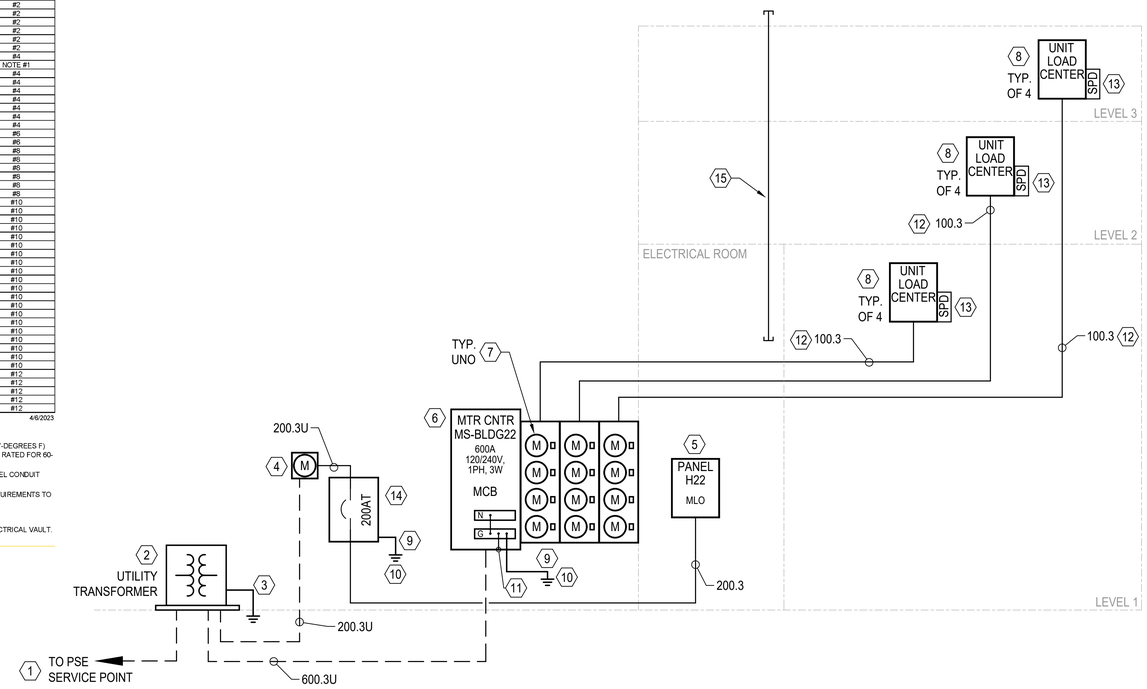
MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABLOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE: NTS

FLAG NOTES (X):

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (12) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 22

UNIT TYPE: 2BR - 2.1 AREA (SF): 782 — 4/6/2023
DEMAND LOAD (kVA): 17.93 => 74.7 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF		=	2.35	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	6.85	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:	100%		=	3.00	kVA
3,001VA - 120,000VA:	35%		=	1.35	kVA
> 120,000VA:	25%		=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	4.35	kVA

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:	75%				
		GENERAL APPLIANCE LOAD - DEMAND		=	1.65 kVA

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	0.14 kVA
100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	3.91 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA
		TOTAL DWELLING UNIT LOAD PER NEC 220, PART III		=	23.54 kVA

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]			=	23.48 kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10KVA:	100%		=	10.00 kVA
> 10 KVA:	40%		=	5.39 kVA

ELECTRIC HEAT AND AC [220.82(C)]:

LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS; 65% NAMEPLATE		=	2.54 kVA
		TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	17.93 kVA

UNIT TYPE: 3BR - 3.1 AREA (SF): 906 — 4/6/2023
DEMAND LOAD (kVA): 18.49 => 77.0 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF		=	2.72	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	7.22	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:	100%		=	3.00	kVA
3,001VA - 120,000VA:	35%		=	1.48	kVA
> 120,000VA:	25%		=	0.00	kVA
		GENERAL LIGHTING LOAD - DEMAND	=	4.48	kVA

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:	75%				
		GENERAL APPLIANCE LOAD - DEMAND		=	1.65 kVA

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	0.14 kVA
100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	4.53 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA
		TOTAL DWELLING UNIT LOAD PER NEC 220, PART III		=	24.29 kVA

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]			=	23.86 kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10KVA:	100%		=	10.00 kVA
> 10 KVA:	40%		=	5.54 kVA

ELECTRIC HEAT AND AC [220.82(C)]:

LARGEST LOAD OF OPTIONS:	< 4 ELECT SPACE HEATERS; 65% NAMEPLATE		=	2.94 kVA
		TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	18.49 kVA

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL MS - 12 unit STACK — 4/6/2023
DEMAND LOAD (kVA): 137.09 => 571.2 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING APPLIANCES 1.5< X < 3.5kW QTY	1.5< X < 3.5kW LOAD (kVA)	3.5kW < X < 8.75kW QTY	3.5kW < X < 8.75kW LOAD (kVA)	8.75kW < X < 12kW QTY	8.75kW < X < 12kW LOAD (kVA)
2BR - 2.1	6	41.08	13.20	0.66	23.46	6	33.00	0	0.00	0	0.00	6	52.80
3BR - 3.1	6	43.31	13.20	0.66	27.18	6	33.00	0	0.00	0	0.00	6	52.80
0								0	0.00	0	0.00	0	0.00
TOTALS:	12	84.38	26.40	1.32	50.64	12	66.00	0	0.00	0	0.00	12	105.60
ADDITIONAL 25% OF LARGEST MOTOR:				0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD	=	334.37	kVA
DEMAND FACTOR FROM TABLE 220.84 =		41%	
TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC	=	137.09	kVA

KIRKLAND HEIGHTS - 12 UNIT STACK FLAT (REHAB)
PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 12):	137.09 kVA
(SEE ATTACHED CALCS)	
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.	
RESIDENTIAL TOTAL:	137.09 kVA
	571.22 AMPS @ 120/240V, 1-PHASE
PROVIDE 600A RESIDENTIAL METER CENTER	

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):	
LIGHTING - Breezeway +Interior:	1.5 kVA
LIGHTING - SITE:	1.5 kVA
GENERAL RECEPTACLES:	4.0 kVA
MECHANICAL:	1.0 kVA
ELECT HEAT (WATER RMS):	1.0 kVA
CENTRAL HOT WATER (HPWH)	7.7 kVA
ELECT SWING TANK	4.5 kVA
HEAT TRACE	0.5 kVA
MISCELLANEOUS:	2.5 kVA
EV CHARGING (2):	16.6 kVA
HOUSE TOTAL:	40.83 kVA
	170.14 AMPS @ 120/240V, 1-PHASE
WITH 25% SPARE CAPACITY	51.04 kVA
	212.6708 AMPS @ 120/240V, 1-PHASE
PROVIDE 200A HOUSE SERVICE	
TOTAL BUILDING SERVICE:	188.13 kVA
	783.89 AMPS @ 120/240V, 1-PHASE

SIDER+BYERS MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 22

BID SET

JOHANNA M. [illegible] — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E22-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	CONDUCTORS PER SET PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.
B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H22 — FED FROM: XFR — LOCATION: ELECTRICAL ROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 200 AMPS — M.L.O OR M.C.B.: M.L.O — 200 AMPS

CKT #	DESCRIPTION	CONN. LOAD TYPE	kVA	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	CONN. LOAD TYPE	kVA	DESCRIPTION	CKT #
1	LTG - BREEZEWAY	L	0.27	20-1	20 / 1	A	20 / 1	20-1	N	0.80	FIRE ALARM CONTROL PANEL	2
3	SPARE		0.00		20 / 1	B	20 / 1	20-1	N	0.24	LTG TIME CLOCK	4
5	RECEPT - LVL 1 BREEZEWAY	R	0.36	20-1	20 / 1	A	20 / 1			0.00	SPARE	6
7	RECEPT - LVL 2 BREEZEWAY	R	0.36	20-1	20 / 1	B	20 / 1	20-1	R	0.54	RECEPTS - ELEC* RM	8
9	RECEPT - LVL 3 BREEZEWAY	R	0.36	20-1	20 / 1	A	20 / 1	20-1	R	0.72	RECEPTS - TELECOM	10
11	LTG - ELEC* / MECH CLOSETS	L	0.24	20-1	20 / 1	B	20 / 1	20-1	R	0.36	RECEPTS - TELECOM	12
13	ELECT HEATER - FIRE SPRINKLER	C	1.50	20-1	20 / 1	A	20 / 1			0.00	SPARE	14
15	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.24	20-1	20 / 1	B	20 / 1	20-1	R	0.72	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20-2N	C	1.73	HEATPUMP WATER HTR - WH-1*	18
19	SPARE		0.00		20 / 1	B					-	20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20-1	20 / 1	A	15 / 2	20-2N	C	1.73	HEATPUMP WATER HTR - "WH-2"	22
23	SPARE		0.00		20 / 1	B					-	24
25	SPARE		0.00		20 / 1	A	15 / 2	20-2N	C	1.73	HEATPUMP WATER HTR - "WH-3"	26
27	SPARE		0.00		20 / 1	B					-	28
29	SPACE ONLY					A	30 / 2	30-2N	C	4.50	WH SWING TANK - "SWH-1"	30
31	SPACE ONLY					B						32
33	SPACE ONLY					A	20 / 1	20-1	N	0.36	CIRC PUMP "CP-1" & MX VALVE "MV-1"	34
35	SPACE ONLY					B	20 / 1	20-1	R	0.72	HEAT TRACE - HEATPUMP WATER LINES	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

		CONNECTED LOAD		DEMAND FACTOR	DEMAND LOAD	
L	= LIGHTING	0.91	kVA	125%	0.64	kVA
R	= RECEPTACLES	4.14	kVA	NEC 220.44	4.14	kVA
M	= MOTORS	0.24	kVA	100%	0.24	kVA
	PLUS 25% OF LARGEST MOTOR	0.24	kVA	25%	0.06	kVA
C	= CONTINUOUS	11.19	kVA	135%	13.98	kVA
N	= NON-CONTINUOUS	1.44	kVA	100%	1.44	kVA
K	= KITCHEN	0.00	kVA	75%	0.00	kVA

PANEL CONNECTED TOTAL: 17.57 kVA, 72.98 AMPS
PANEL DEMAND TOTAL: 20.50 kVA, 85.41 AMPS

NOTES:
A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER.

LOAD CENTER - 2 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O OR M.C.B.: M.L.O — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20-1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN'L TO. RECEPTS. SD (1)	20-1	20 / 1	B			-	4
5	RECEPTS, ERV, MEDIA PNL (1)	20-1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20-1	20 / 1	B			-	8
9	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	A	20 / 3	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	B			-	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20-1	20 / 1	B			-	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

LOAD CENTER - 3 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O OR M.C.B.: M.L.O — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20-1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN'L TO. RECEPTS. SD (1)	20-1	20 / 1	B			-	4
5	RECEPTS, ERV, MEDIA PNL (1)	20-1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20-1	20 / 1	B			-	8
9	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	A	20 / 3	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	B			-	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20-1	20 / 1	B			-	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-3	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					
			/						
ERV-1	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.163					2
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS; CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES. DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	240 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3

NOTES:
1. CONFIRM EXACT LOCATION WITH ARCHITECT.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 12 UNIT STACKED FLATS

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES BED 1	BED 2	BED 3	LIVING
A	2-BDRM	CH-0.84	CH-0.7		CH-1.8
B	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
C	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
D	2-BDRM	CH-0.84	CH-0.7		CH-1.8
E	2-BDRM	CH-0.56	CH-0.56		CH-0.93
F	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
G	3-BDRM	CH-0.42	CH-0.42	CH-0.42	CH-0.7
H	2-BDRM	CH-0.56	CH-0.56		CH-0.93
I	2-BDRM	CH-0.7	CH-0.56		CH-1.12
J	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
K	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
L	2-BDRM	CH-0.7	CH-0.56		CH-1.12

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.

B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 22

BID SET

GEORGINNA M. JOHNSON — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

REVISIONS / NOTES

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/630 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE
& SPECS FOR ALL 'S' LIGHTING FIXTURES.

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

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BUILDING 22

BID SET

GEORGINNA M. TAYLOR
STATE OF WASHINGTON
43761
REGISTERED
PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES
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LUMINAIRE SCHEDULE

PERMIT #	
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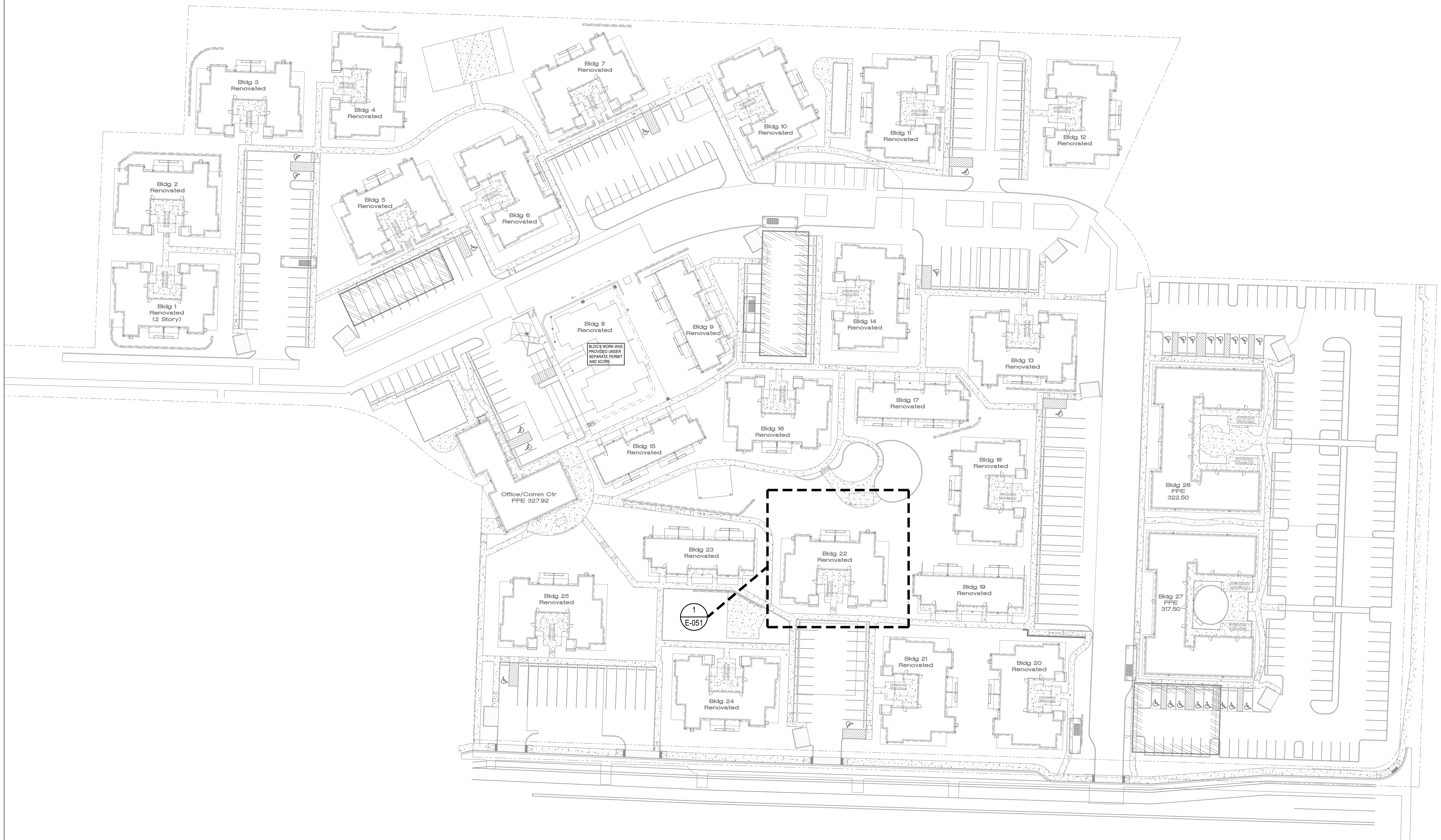

OVERALL PROJECT SITE PLAN
SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
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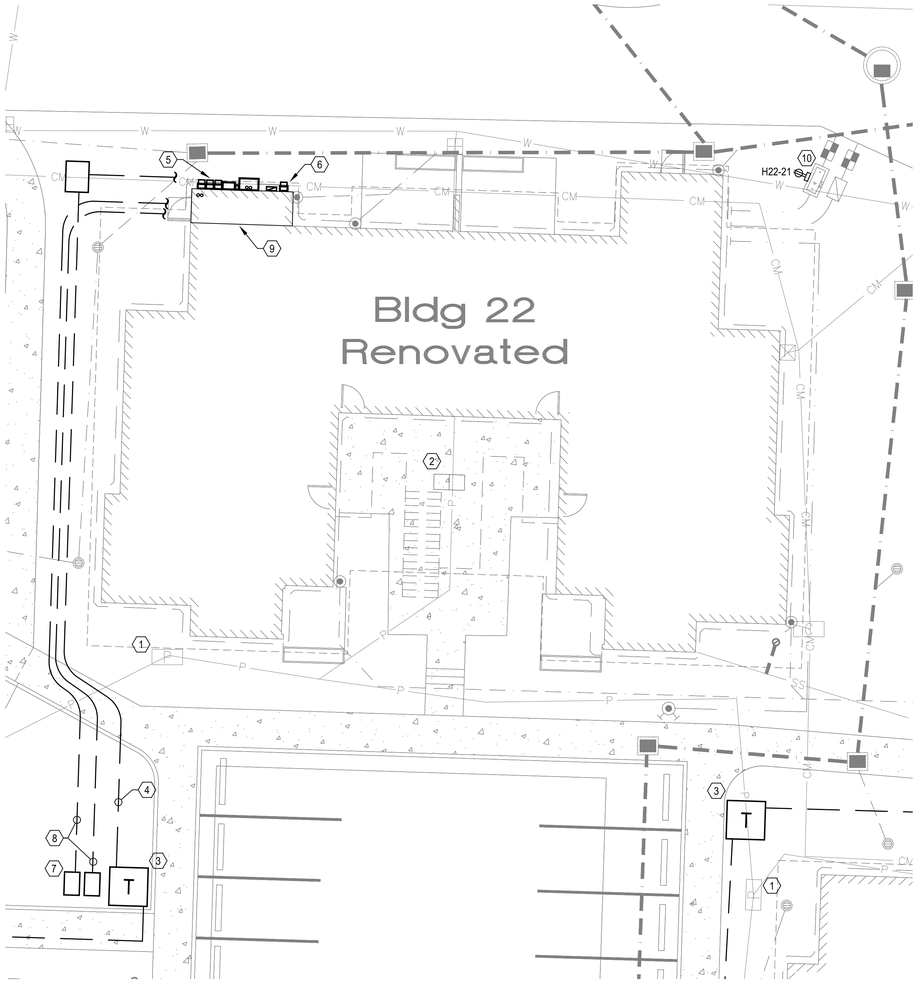
ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.



ELECTRICAL SITE PLAN - BUILDING 22
SCALE: 1/8" = 1'-0"

FLAG NOTES (X):

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
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ELECTRICAL SITE PLAN - BUILDING 22

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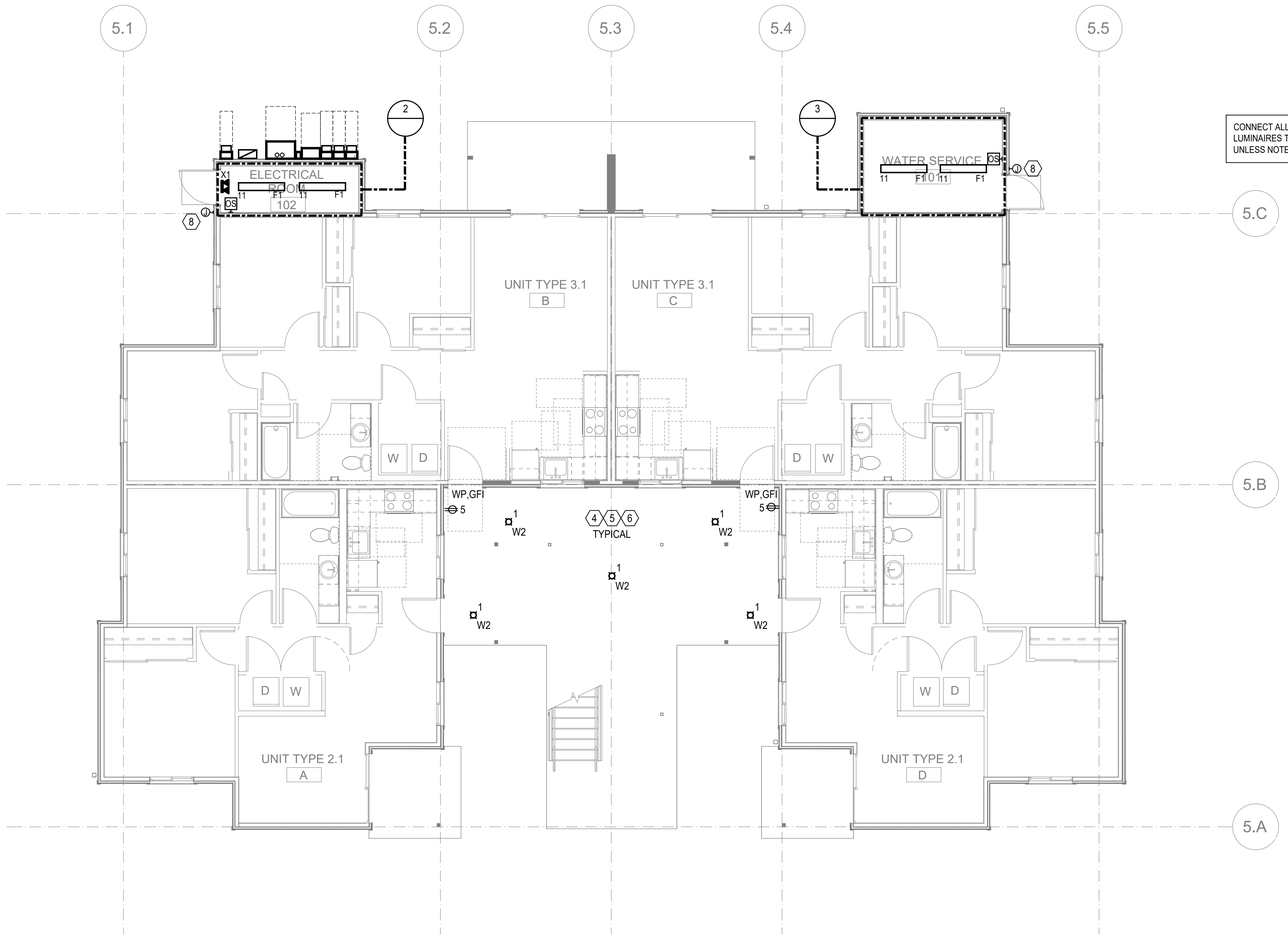


CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H22 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

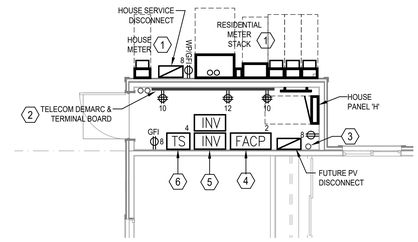
D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.
2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-375-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.
7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.
8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.
10. CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.

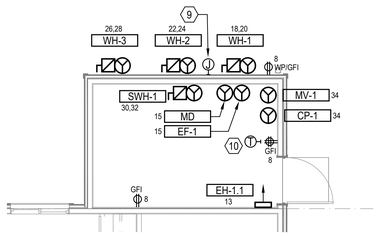
POWER AND LIGHTING PLAN - BUILDING 22 - LEVEL 1

SCALE: 3/16"=1'-0"



2 ELECTRICAL ROOM

E-101 — 1/4"=1'-0"



3 WATER ROOM

E-101 — 1/4"=1'-0"

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
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BUILDING 22

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POWER AND LIGHTING PLAN - BUILDING 22 - LEVEL 1

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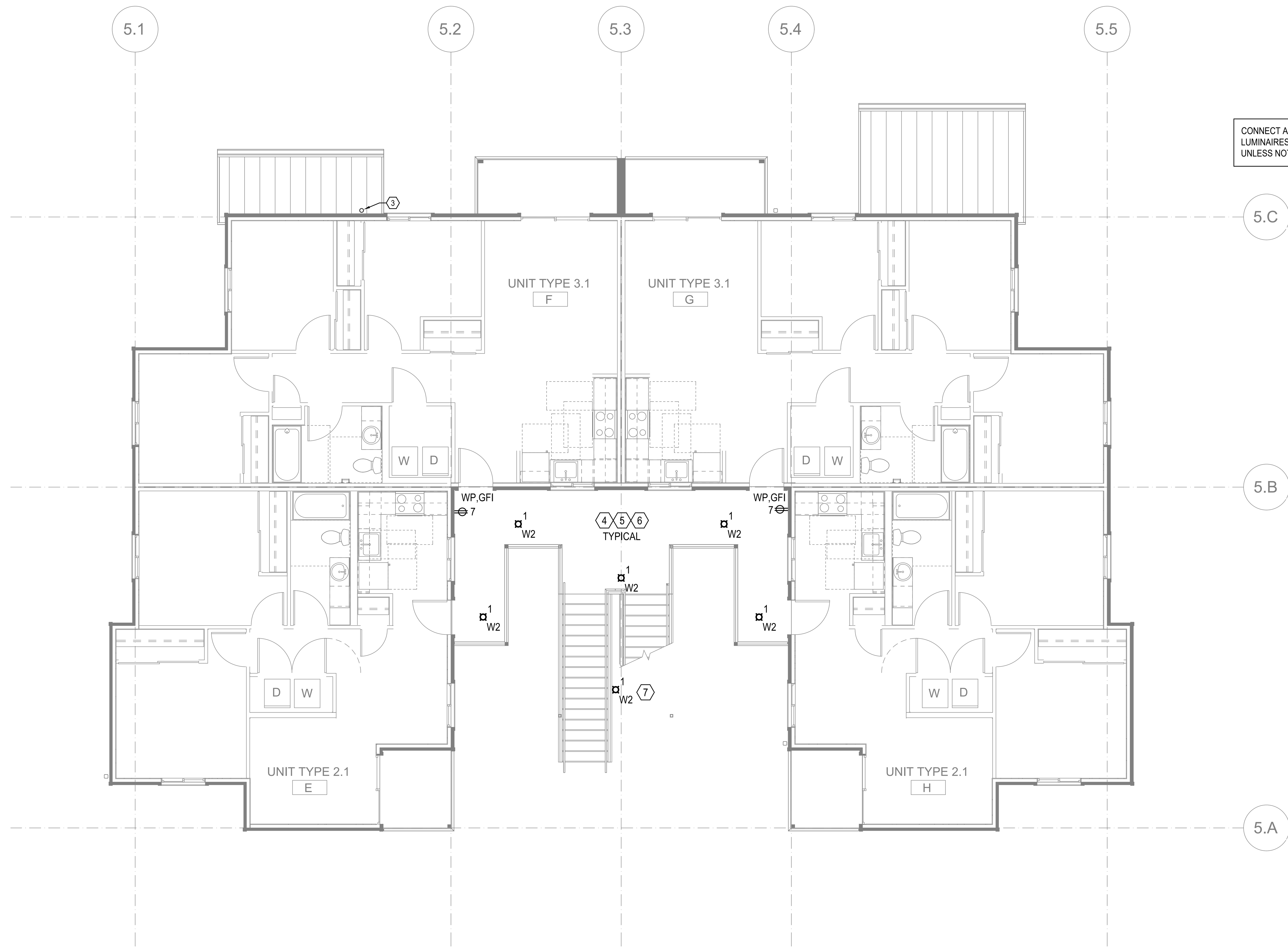

POWER AND LIGHTING PLAN - BUILDING 22 - LEVEL 2

SCALE: 3/16"=1'-0"

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H22 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES ⟨X⟩:

1. NOT USED
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 375 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR FIXTURE TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-375-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.
7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 22

BID SET

GEORGINNA M. ... STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 22 - LEVEL 2

PERMIT #	
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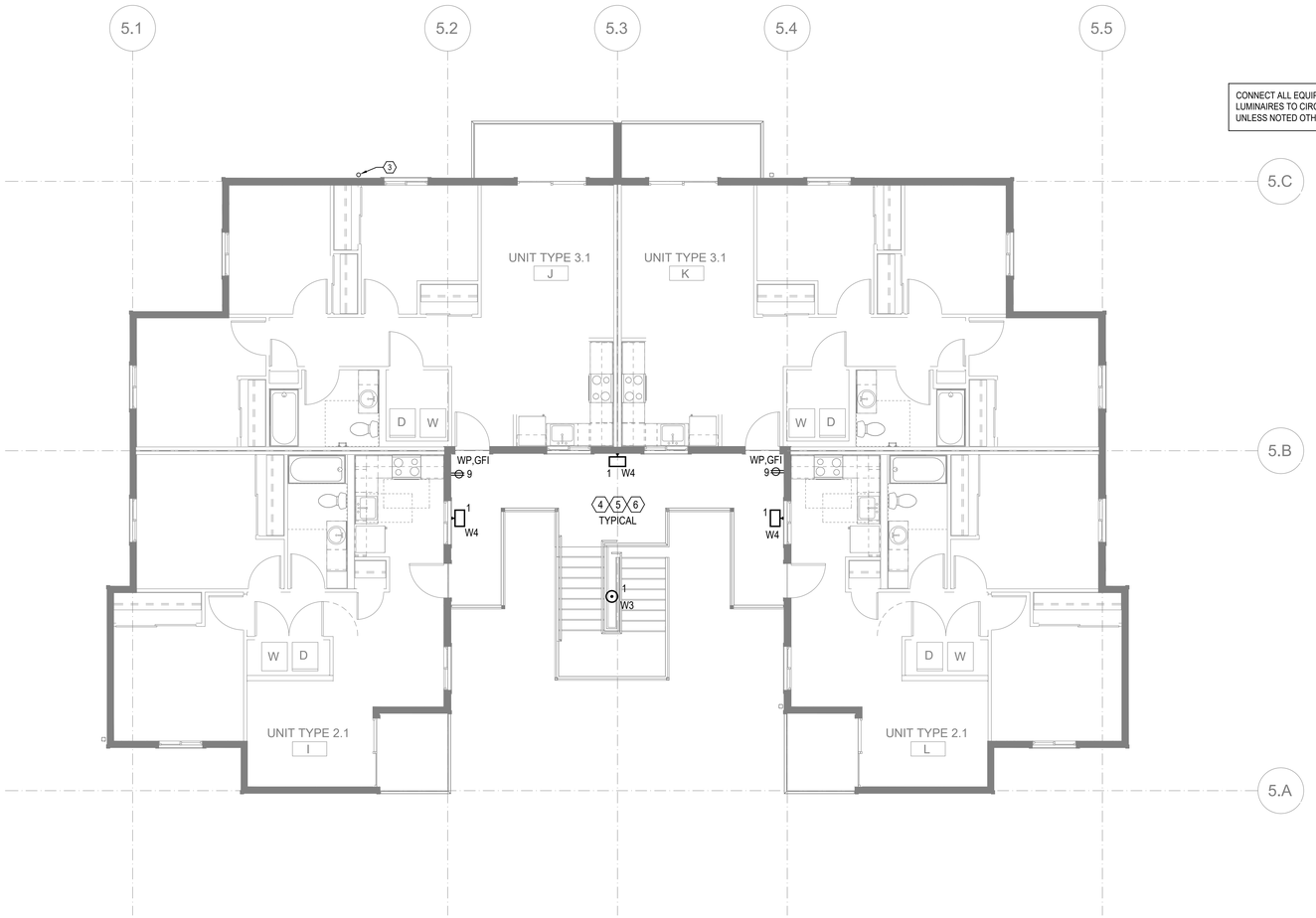

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H22 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
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POWER AND LIGHTING PLAN - BUILDING 22 - LEVEL 3

SCALE: 3/16"=1'-0"

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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KIRKLAND HEIGHTS APARTMENTS

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BUILDING 22

BID SET

REVISIONS / NOTES

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POWER AND LIGHTING PLAN - BUILDING 22 - LEVEL 3

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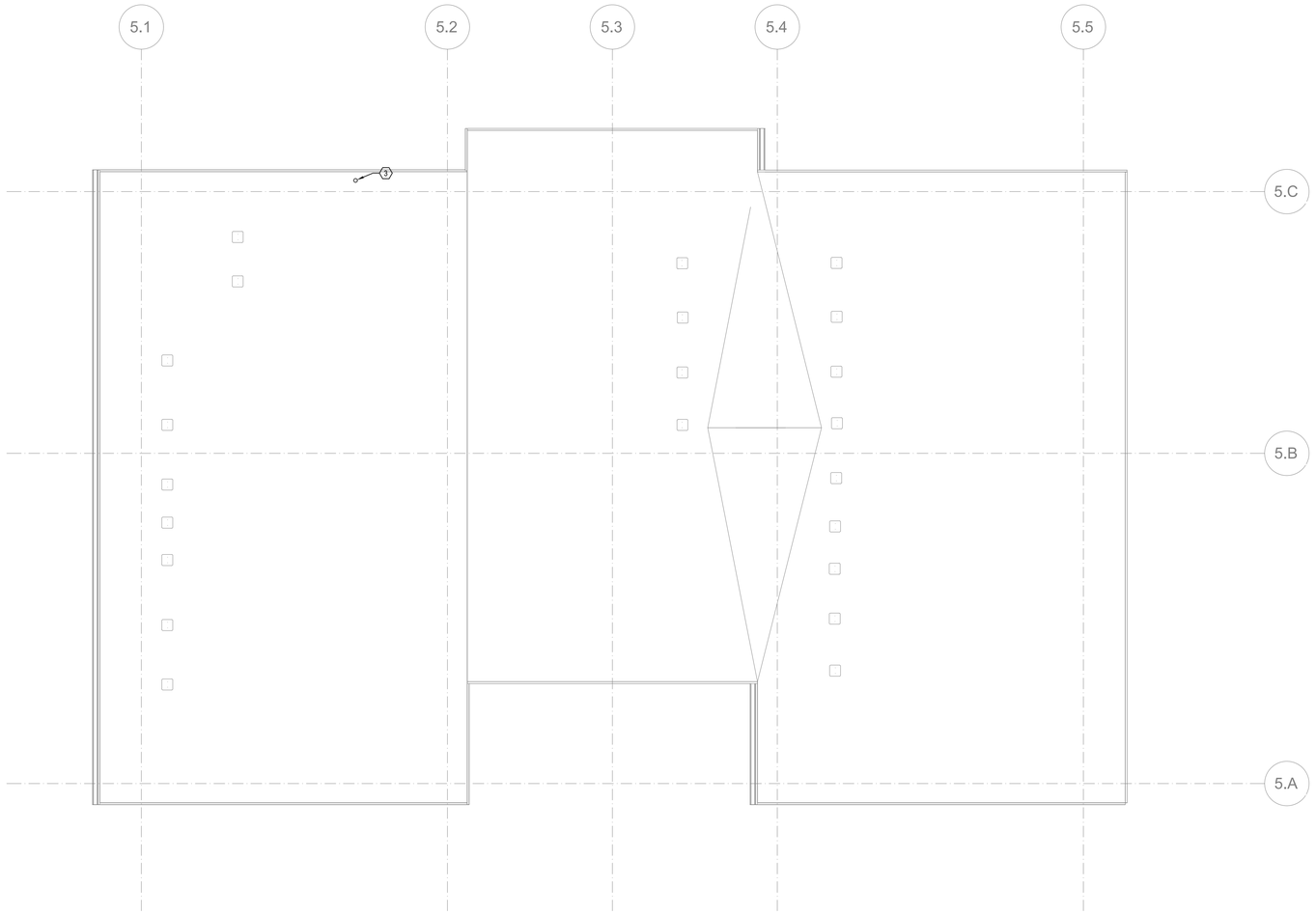

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

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POWER PLAN - BUILDING 22 - ROOF

SCALE: 3/16"=1'-0"

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BUILDING 22

BID SET

GEORGINNA M. LABRECQUE
STATE OF WASHINGTON
43761
REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

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POWER PLAN - BUILDING 22 - ROOF

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FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	CONDUCTORS PER SET: PHASE / NEUTRAL (N) (QTY) SIZE	CONDUCTORS PER SET: GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION);
CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

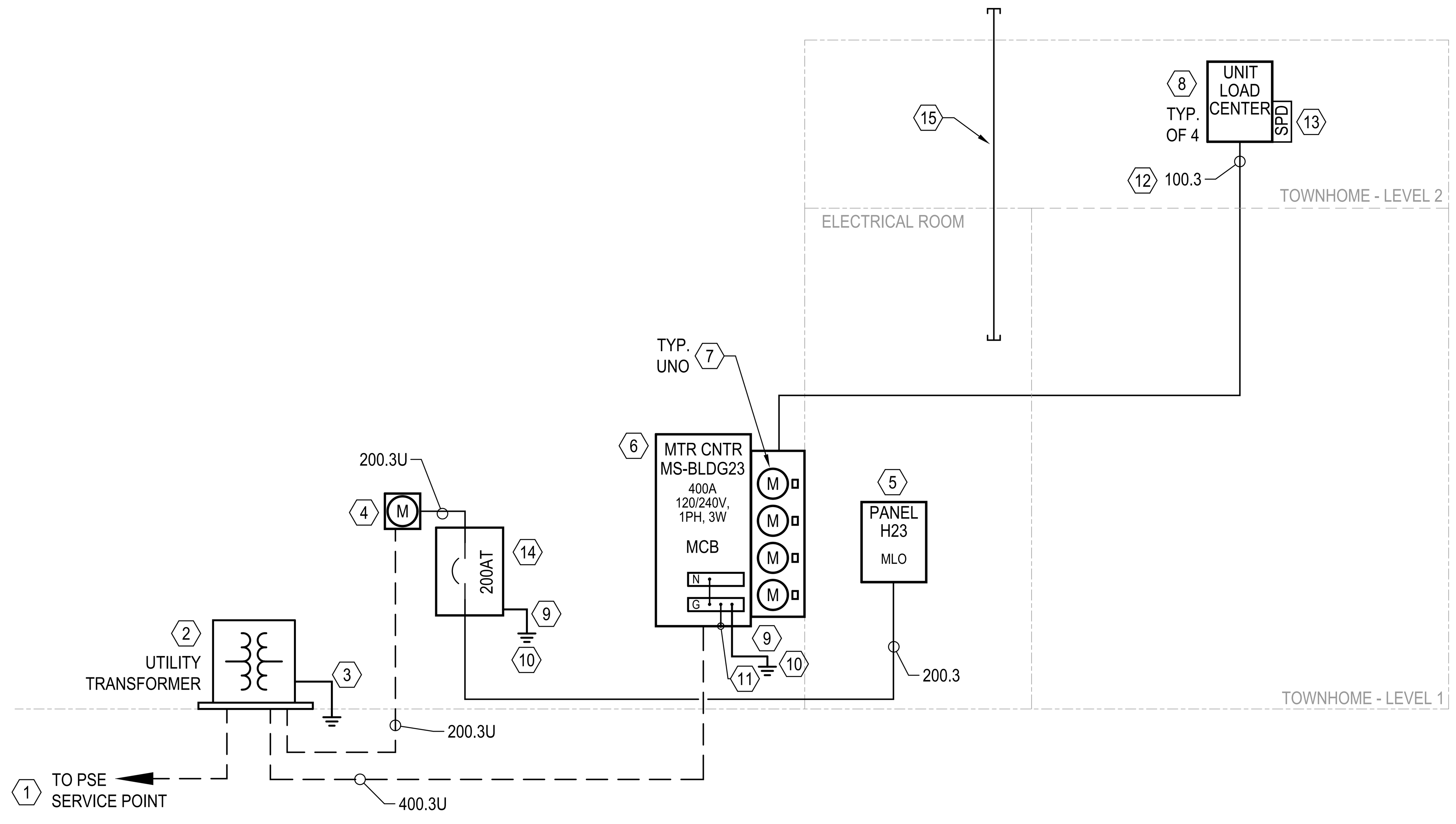
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM
SCALE:NTS

FLAG NOTES ⓧ :

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (4) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 23

UNIT TYPE: TOWNHOUSE UNIT **AREA (SF):** 1,211 4/6/2023
DEMAND LOAD (kVA): 18.81 => 78.4 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =		AREA x 3VA/SF	=	3.63	kVA
SMALL-APPLIANCE CKTS [220.52(A)] =	2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] =	1	CKTS x 1500VA	=	1.50	kVA
		SUBTOTAL (CONNECTED)	=	8.13	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:					
0 - 3,000VA:		100%	=	3.00	kVA
3,001VA - 120,000VA:		35%	=	1.80	kVA
> 120,000VA:		25%	=	0.00	kVA
GENERAL LIGHTING LOAD - DEMAND			**=**	**4.80**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)			
REFRIGERATOR	1	AT	0.7	=	0.70	kVA
RANGE HOOD	1	AT	0.3	=	0.30	kVA
MICROWAVE		AT		=	0.00	kVA
DISHWASHER	1	AT	1.2	=	1.20	kVA
WASHER	1	AT	1.2	=	1.20	kVA
GARBAGE DISPOSAL		AT		=	0.00	kVA
WATER HEATER		AT		=	0.00	kVA
			SUBTOTAL (CONNECTED)	=	3.40	kVA
APPLIANCE DEMAND FACTOR [220.53]:			75%			
GENERAL APPLIANCE LOAD - DEMAND				**=**	**2.55**	**kVA**

MOTORS [220.50]:

	QTY		LOAD (kVA EACH)			
TOILET EXHAUST FAN		AT		=	0.00	kVA
ERV UNIT	1	AT	0.11	=	0.11	kVA
KITCHEN EXHAUST FAN		AT		=	0.00	kVA
+25% OF LARGEST MOTOR				=	0.03	kVA
GENERAL MOTOR LOAD - DEMAND				**=**	**0.14**	**kVA**
100% AC EQUIP [220.50] / SPACE HEATING [220.51]				=	6.06	kVA
	QTY		LOAD (kVA EACH)			
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50	kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00	kVA
ELECTRIC OVEN [220.55]		AT		=	0.00	kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00	kVA
TOTAL DWELLING UNIT LOAD PER NEC 220, PART III				**=**	**27.04**	**kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	25.97	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	6.39	kVA
ELECTRIC HEAT AND AC [220.82(C)]:				
LARGEST LOAD OF OPTIONS:	> = 4 ELECT SPACE HEATERS; 40% NAMEPLATE	=	2.42	kVA
TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV		**=**	**18.81**	**kVA**

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL MS- 4 unit TOWNHOUSE 4/6/2023
DEMAND LOAD (kVA): 57.61 => 240.0 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING 1.5< X < 3.5kW QTY	COOKING 1.5< X < 3.5kW LOAD (kVA)	COOKING 3.5kW < X < 8.75kW QTY	COOKING 3.5kW < X < 8.75kW LOAD (kVA)	COOKING 8.75kW < X < 12kW QTY	COOKING 8.75kW < X < 12kW LOAD (kVA)
0								0	0.00	0	0.00	0	0.00
TOWNHOUSE UNIT	4	32.53	13.60	0.44	24.22	4	22.00	0	0.00	0	0.00	4	35.20
0								0	0.00	0	0.00	0	0.00
TOTALS:	4	32.53	13.60	0.44	24.22	4	22.00	0	0.00	0	0.00	4	35.20
	ADDITIONAL 25% OF LARGEST MOTOR:			0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD = 128.02 kVA
DEMAND FACTOR FROM TABLE 220.84 = 45%

TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC = 57.61 kVA

KIRKLAND HEIGHTS - TOWNHOUSE BLDG (REHAB)
PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 4):	57.61 kVA
(SEE ATTACHED CALCS)	
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.	
RESIDENTIAL TOTAL:	57.61 kVA
	240.04 AMPS @ 120/240V, 1-PHASE
	PROVIDE 400A RESIDENTIAL METER CENTER

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):	
LIGHTING - Breezeway +Interior:	0.5 kVA
LIGHTING - SITE:	1.0 kVA
GENERAL RECEPTACLES:	1.0 kVA
MECHANICAL:	kVA
ELECT HEAT (WATER RMS):	1.0 KVA
CENTRAL HOT WATER (HPWH)	5.3 KVA
ELECT SWING TANK	4.5 KVA
HEAT TRACE	0.5 kVA
MISCELLANEOUS:	2.0 kVA
EV CHARGING (2):	16.64 kVA
HOUSE TOTAL:	32.41 kVA
	89.96 AMPS @ 120/240V, 1-PHASE
WITH 25% SPARE CAPACITY	40.51 kVA
	112.4556 AMPS @ 120/240V, 1-PHASE
	PROVIDE 200A HOUSE SERVICE
TOTAL BUILDING SERVICE:	98.12 kVA
	272.36 AMPS @ 120/240V, 1-PHASE

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BUILDING 23
BID SET

GEORGINNA M. ... STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
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TITLE
SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
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E23-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	CONDUCTORS PER SET PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.
B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H23 — FED FROM: XFR — LOCATION: ELECTRICAL ROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
A.I.C. RATING: SEE SINGLE-LINE DIAGRAM — BUS RATING: 200 AMPS — M.L.O OR M.C.B.: M.L.O. — 200 AMPS

CKT #	DESCRIPTION	CONN TYPE	LOAD kVA	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	CONN TYPE	LOAD kVA	DESCRIPTION	CKT #
1	LTG - ELECT / MECH CLOSETS	L	0.12	20.1	20 / 1	A	20 / 1	20.1	N	0.80	FIRE ALARM CONTROL PANEL	2
3	ELECT HEATER - FIRE SPRINKLER	C	1.50	20.1	20 / 1	B	20 / 1			0.00	SPARE	4
5	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.12	20.1	20 / 1	A	20 / 1			0.00	SPARE	6
7	SPARE		0.00		20 / 1	B	20 / 1	20.1	R	0.54	RECEPTS - ELEC^ RM	8
9	SPARE		0.00		20 / 1	A	20 / 1	20.1	R	0.36	RECEPTS - TELECOM	10
11	SPARE		0.00		20 / 1	B	20 / 1	20.1	R	0.36	RECEPTS - TELECOM	12
13	SPARE		0.00		20 / 1	A	20 / 1			0.00	SPARE	14
15	SPARE		0.00		20 / 1	B	20 / 1	20.1	R	0.54	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-1^	18
19	SPARE		0.00		20 / 1	B						20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20.1	20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - "WH-2"	22
23	SPARE		0.00		20 / 1	B					-	24
25	SPARE		0.00		20 / 1	A	20 / 1			0.00	SPARE	26
27	SPARE		0.00		20 / 1	B	20 / 1			0.00	SPARE	28
29	SPACE ONLY					A	30 / 2	30.2	C	4.50	WH SWING TANK - "SWH-1"	30
31	SPACE ONLY					B						32
33	SPACE ONLY					A	20 / 1	20.1	N	0.36	CIRC PUMP "CP-1" & MX VALVE "MV-1"	34
35	SPACE ONLY					B	20 / 1	20.1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

		CONNECTED LOAD		DEMAND FACTOR	DEMAND LOAD	
L	= LIGHTING	0.12	kVA	125%	0.15	kVA
R	= RECEPTACLES	2.52	kVA	NEC 220.44	2.52	kVA
M	= MOTORS	0.12	kVA	100%	0.12	kVA
	PLUS 25% OF LARGEST MOTOR	0.12	kVA	25%	0.03	kVA
C	= CONTINUOUS	9.40	kVA	125%	11.92	kVA
N	= NON-CONTINUOUS	1.20	kVA	100%	1.20	kVA
K	= KITCHEN	0.00	kVA	75%	0.00	kVA

PANEL CONNECTED TOTAL: 13.40 kVA, 55.90 AMPS
PANEL DEMAND TOTAL: 15.84 kVA, 66.00 AMPS

NOTES:
A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER.

LOAD CENTER - 4 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A.I.C. RATING: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O OR M.C.B.: M.L.O. — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN'L'TG, RECEPTS, SD (1)	20.1	20 / 1	B			-	4
5	RECEPTS, ENT, MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			-	8
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			-	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			-	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19	BEDROOM 4 RECEPTS, LTS, SD (1)	20.1	20 / 1	B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A	20 / 1	20.1	HEAT - KITCHEN, BATH (1)	22
23	-			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 6FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-2	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.135					2
			/						
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS; CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES; DISCONNECT SHALL BE ACCESSIBLE & AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H X 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H X 118"L	1, 4
EWH-T	DWELLING UNITS	KING	PAW WALL HEATER	0.25	120 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	120 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 5

NOTES:
1. CONFIRM EXACT LOCATION WITH ARCHITECT.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 4 UNIT TOWNHOMES

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES BED 1	BED 2	BED 3	BED 4	KITCHEN	BATH	LIVING
A	4-BDRM	CH-0.93	CH-0.56	CH-0.56	CH-0.93	EWH-T	EWH-T	CH-1.4
B	4-BDRM	CH-0.7	CH-0.7	CH-0.7	CH-0.7	EWH-T	EWH-T	CH-1.12
C	4-BDRM	CH-0.7	CH-0.7	CH-0.7	CH-0.7	EWH-T	EWH-T	CH-1.12
D	4-BDRM	CH-0.93	CH-0.56	CH-0.56	CH-0.93	EWH-T	EWH-T	CH-1.4

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.
B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

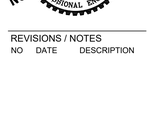
New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 23

BID SET



REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

SCHEDULES

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E23-004

10/7/2021 7:33:34 AM

LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/630 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE
& SPECS FOR ALL 'S' LIGHTING FIXTURES.

10/7/2021 7:33:34 AM

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 23

BID SET

GEORGINNA M. TAYLOR
STATE OF WASHINGTON
43761
REGISTERED
PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

LUMINAIRE SCHEDULE

PERMIT #	
DRAWN	RA, JF
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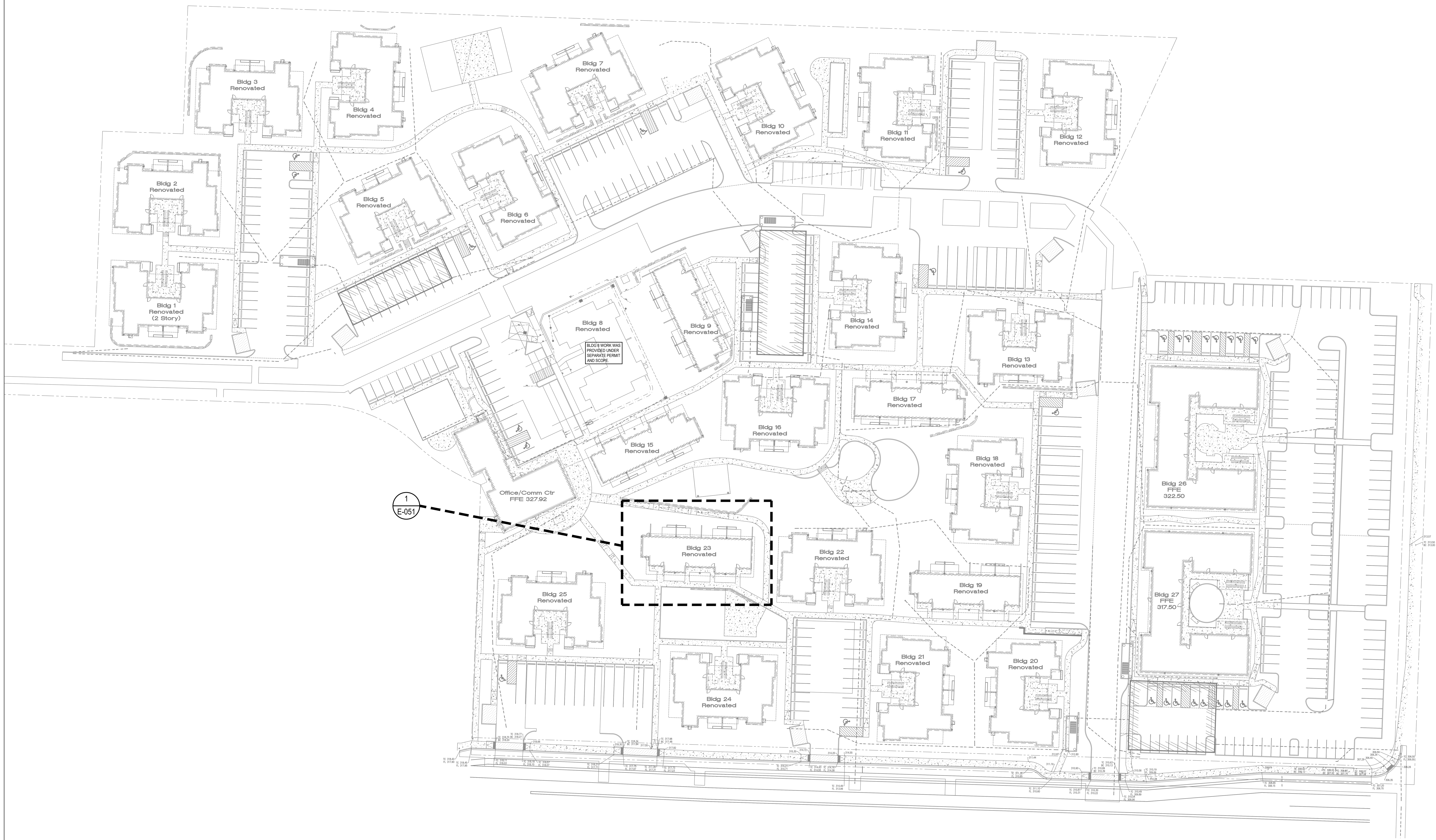
ISSUE DATE	4/14/2023
JOB NO.	22016

SHEET NO.:

E23-005



OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

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CONTRACT #: TC2300131

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BUILDING 23

BID SET

GEORGINNA M. [illegible] STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

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OVERALL PROJECT SITE PLAN

PERMIT #	
DRAWN	RA, JF
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ISSUE DATE	4/14/2023
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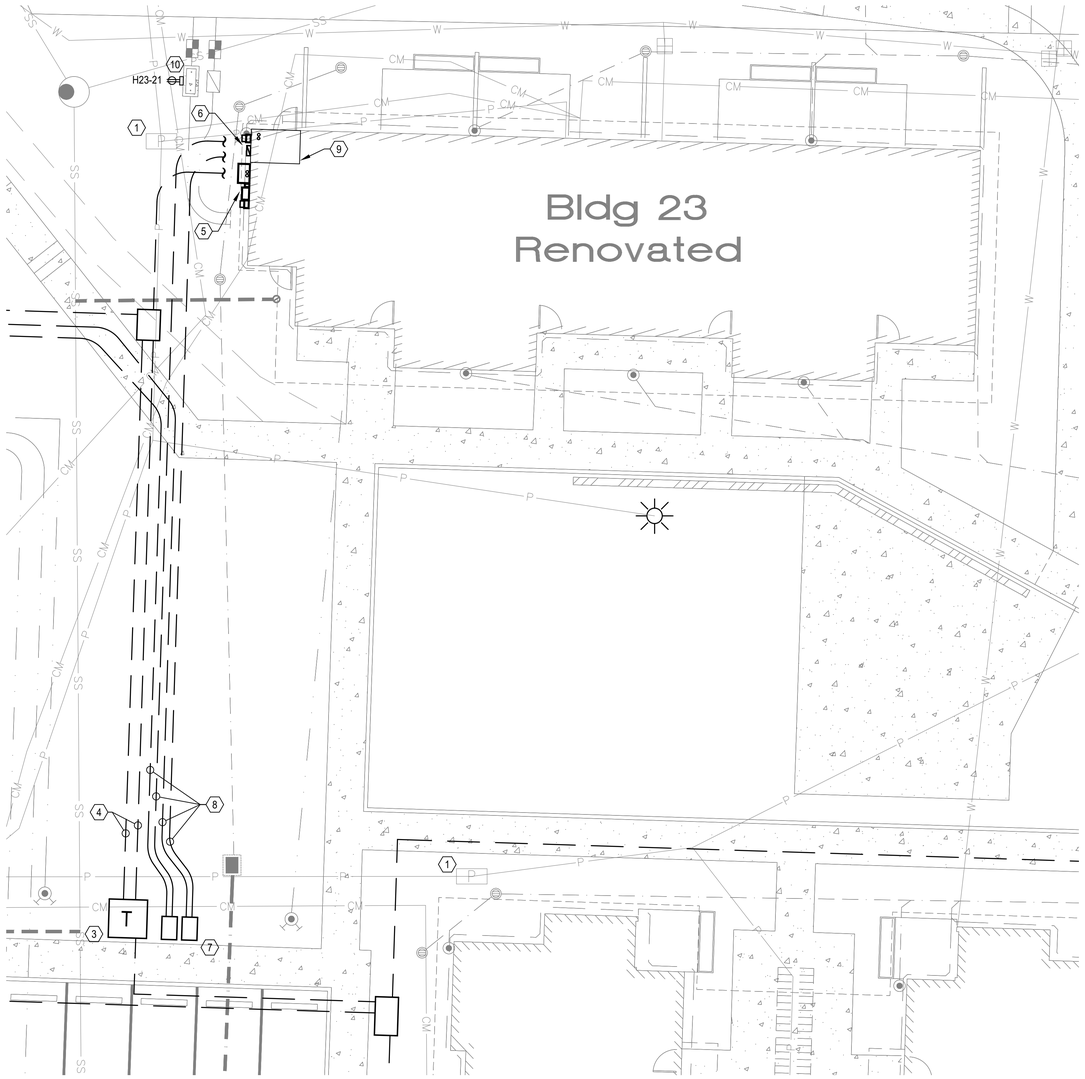
SHEET NO.:	

E23-050



ELECTRICAL SITE PLAN - BUILDING 23

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

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

FLAG NOTES (X):

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

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13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 23

BID SET

GEORGIANNA M. LEE — STATE OF WASHINGTON — 43781 — REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

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ELECTRICAL SITE PLAN - BUILDING 23

PERMIT #	
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ISSUE DATE	4/14/2023
JOB NO.	22016
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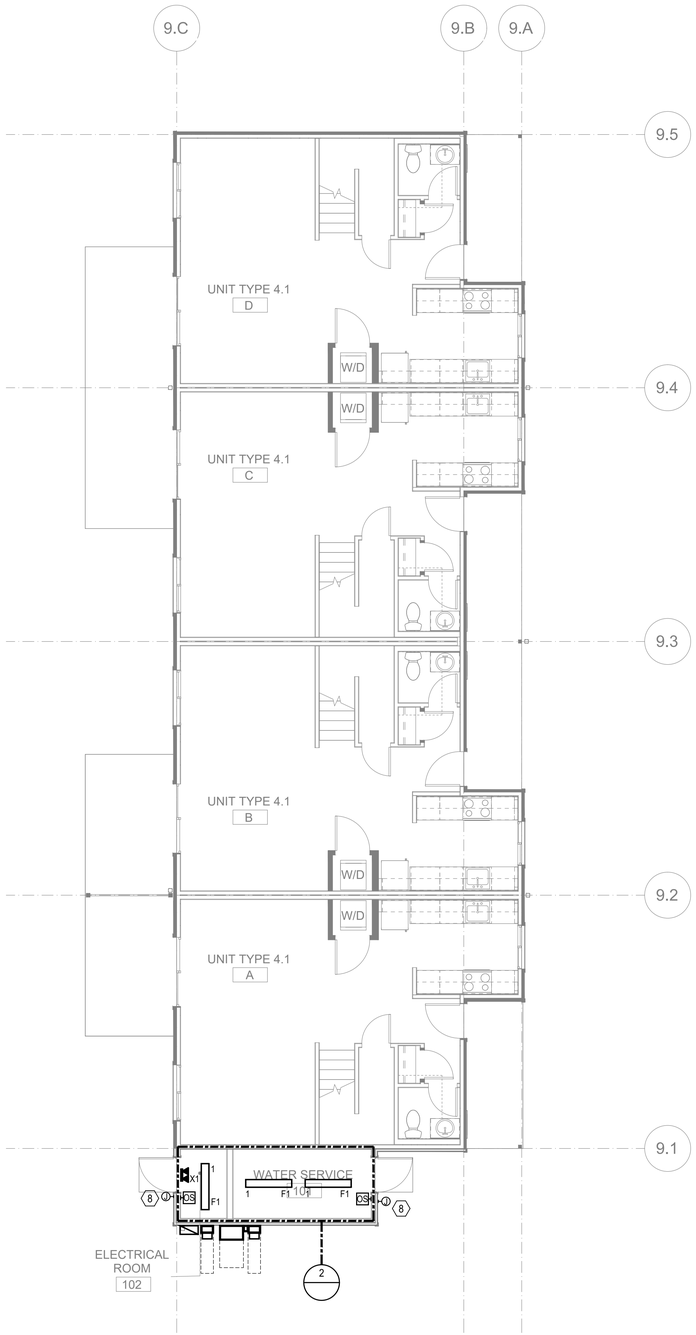


CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H23 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

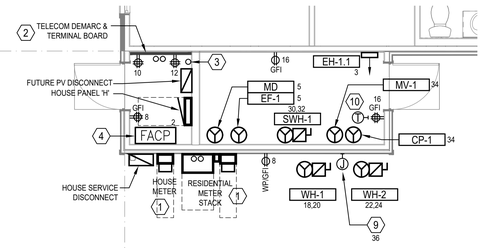
B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.
2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. NOT USED
6. NOT USED.
7. NOT USED.
8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.
10. ELECTRICAL CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



ELECTRICAL AND WATER ROOM

2 / E-101 — 1/4"=1'-0"

POWER AND LIGHTING PLAN - BUILDING 23 - LEVEL 1

SCALE: 3/16"=1'-0"

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 23

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

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TITLE

POWER AND LIGHTING PLAN - BUILDING 23 - LEVEL 1

PERMIT #	
DRAWN	RA, JF
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ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

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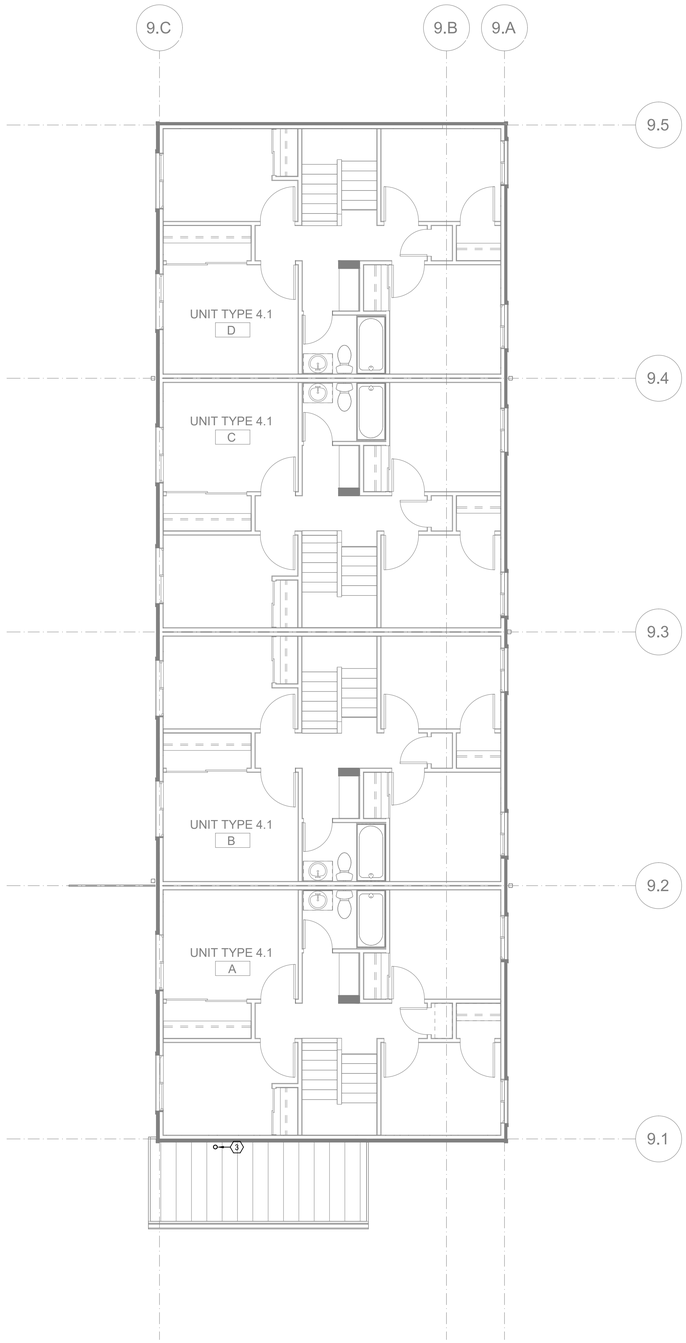

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H23 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

POWER AND LIGHTING PLAN - BUILDING 23 - LEVEL 2

SCALE: 3/16"=1'-0"

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 23

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

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TITLE

POWER AND LIGHTING PLAN - BUILDING 23 - LEVEL 2

PERMIT #	
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E23-102

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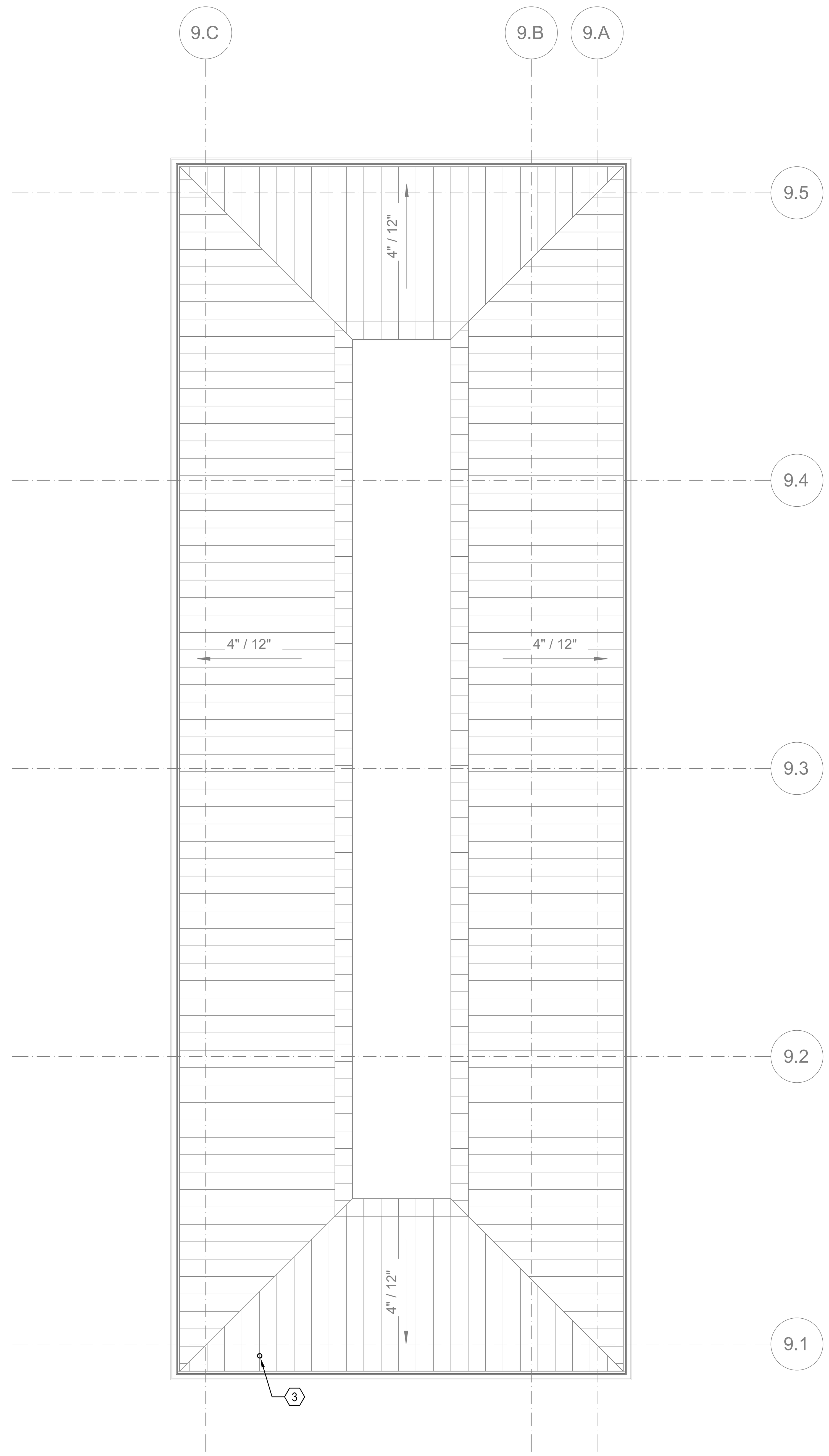

POWER PLAN - BUILDING 23 - ROOF

SCALE: 3/16"=1'-0"

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

GENERAL NOTES:

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FLAG NOTES (X):

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

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BID SET

GEORGINNA M. ... STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVIEWS / NOTES

NO	DATE	DESCRIPTION

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POWER PLAN - BUILDING 23 - ROOF

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JOB NO.	22016
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FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION);
CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

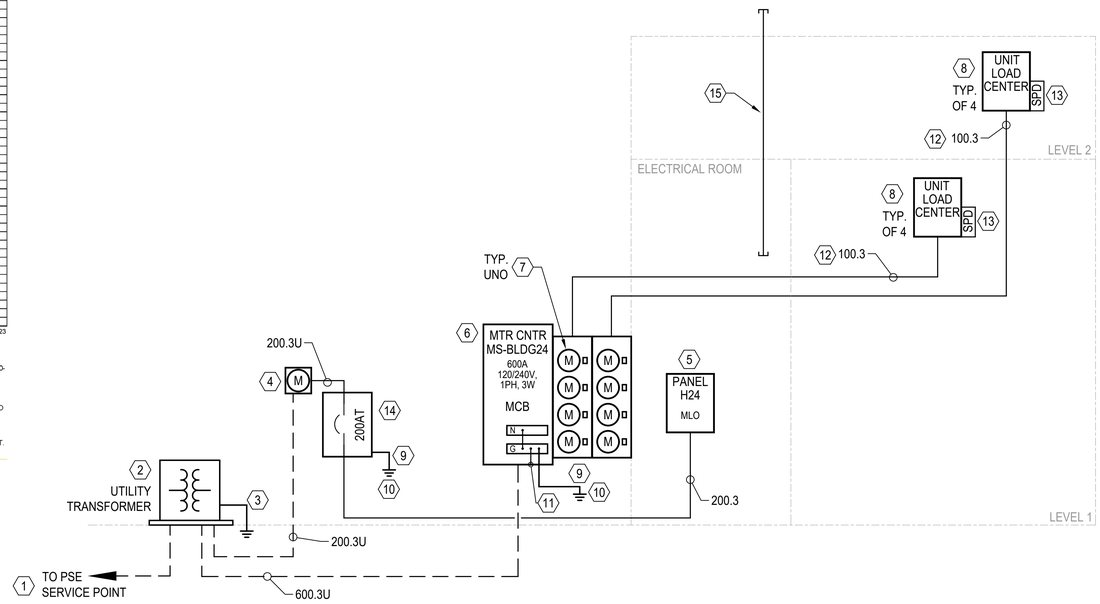
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS, WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH 'U' ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE: NTS

FLAG NOTES (X):

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (8) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 24

UNIT TYPE: 2BR - 2.1 | **AREA (SF): 782** | 4/6/2023
DEMAND LOAD (kVA): 17.93 => 74.7 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	2.35	kVA
SMALL-APPLIANCE CKTS [220.52(A)] = 2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] = 1	CKTS x 1500VA	=	1.50	kVA
	SUBTOTAL (CONNECTED)	=	6.85	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:				
0 - 3,000VA:	100%	=	3.00	kVA
3,001VA - 120,000VA:	35%	=	1.35	kVA
> 120,000VA:	25%	=	0.00	kVA
	GENERAL LIGHTING LOAD - DEMAND	=	**4.35**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:		75%			
		GENERAL APPLIANCE LOAD - DEMAND		=	**1.65 kVA**

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	**0.14 kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51] = 3.91 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA
		TOTAL DWELLING UNIT LOAD PER NEC 220, PART III		=	**23.54 kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.48	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	5.39	kVA

ELECTRIC HEAT AND AC [220.82(C)]:

LARGEST LOAD OF OPTIONS: < 4 ELECT SPACE HEATERS: 65% NAMEPLATE		=	2.54	kVA
	TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	**17.93**	**kVA**

UNIT TYPE: 3BR - 3.1 | **AREA (SF): 906** | 4/6/2023
DEMAND LOAD (kVA): 18.49 => 77.0 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	2.72	kVA
SMALL-APPLIANCE CKTS [220.52(A)] = 2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] = 1	CKTS x 1500VA	=	1.50	kVA
	SUBTOTAL (CONNECTED)	=	7.22	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:				
0 - 3,000VA:	100%	=	3.00	kVA
3,001VA - 120,000VA:	35%	=	1.48	kVA
> 120,000VA:	25%	=	0.00	kVA
	GENERAL LIGHTING LOAD - DEMAND	=	**4.48**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:		75%			
		GENERAL APPLIANCE LOAD - DEMAND		=	**1.65 kVA**

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	**0.14 kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51] = 4.53 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA
		TOTAL DWELLING UNIT LOAD PER NEC 220, PART III		=	**24.29 kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.86	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10kVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	5.54	kVA

ELECTRIC HEAT AND AC [220.82(C)]:

LARGEST LOAD OF OPTIONS: < 4 ELECT SPACE HEATERS: 65% NAMEPLATE		=	2.94	kVA
	TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	**18.49**	**kVA**

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL | **MS - 8 unit STACK** | 4/6/2023
DEMAND LOAD (kVA): 95.86 => 399.4 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING APPLIANCES 1.6< X < 3.6kW QTY	1.6< X < 3.6kW LOAD (kVA)	3.6kW < X < 8.76kW QTY	3.6kW < X < 8.76kW LOAD (kVA)	8.76kW < X < 12kW QTY	8.76kW < X < 12kW LOAD (kVA)
2BR - 2.1	4	27.38	8.80	0.44	15.64	4	22.00	0	0.00	0	0.00	4	35.20
3BR - 3.1	4	28.87	8.80	0.44	18.12	4	22.00	0	0.00	0	0.00	4	35.20
0								0	0.00	0	0.00	0	0.00
TOTALS:	8	56.26	17.60	0.88	33.76	8	44.00	0	0.00	0	0.00	8	70.40

ADDITIONAL 25% OF LARGEST MOTOR: 0.03

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD = 222.92 kVA
DEMAND FACTOR FROM TABLE 220.84 = 43%

TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC = 95.86 kVA

KIRKLAND HEIGHTS - 8 UNIT STACK FLAT (REHAB)
PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 8):	95.86 kVA
(SEE ATTACHED CALCS)	
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.	
RESIDENTIAL TOTAL:	95.86 kVA
	399.40 AMPS @ 120/240V, 1-PHASE
	PROVIDE 600A RESIDENTIAL METER CENTER

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):	
LIGHTING - Breezeway +Interior:	1.5 kVA
LIGHTING - SITE:	1.5 kVA
GENERAL RECEPTACLES:	4.0 kVA
MECHANICAL:	1.0 kVA
ELECT HEAT (WATER RMS):	1.0 kVA
CENTRAL HOT WATER (HPWH)	5.6 kVA
ELECT SWING TANK	4.5 kVA
HEAT TRACE	0.5 kVA
MISCELLANEOUS:	2.5 kVA
EV CHARGING (2):	16.6 kVA
HOUSE TOTAL:	38.71 kVA
	161.30 AMPS @ 120/240V, 1-PHASE
WITH 25% SPARE CAPACITY	48.39 kVA
	201.6208 AMPS @ 120/240V, 1-PHASE
	PROVIDE 200A HOUSE SERVICE
TOTAL BUILDING SERVICE:	144.25 kVA
	601.03 AMPS @ 120/240V, 1-PHASE

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 24

BID SET

JOHANNA M. [illegible] STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #

DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E24-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	CONDUCTORS PER SET PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
50.4	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.3	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.2N	(1) 1-INCH	CU	(3) #6	#10
50.2	(1) 1-INCH	CU	(2) #6 / (2) #6 N	#10
50.1	(1) 1-INCH	CU	(2) #6	#10
40.4	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.3	(1) 1-INCH	CU	(3) #6	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILITY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.
B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H24 — FED FROM: XFR — LOCATION: ELECTRICAL ROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 200 AMPS — M.L.O OR MCB: MLO — 200 AMPS

CKT #	DESCRIPTION	CONN LOAD TYPE	kVA	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	CONN LOAD TYPE	kVA	DESCRIPTION	CKT #
1	TG - BREEZEWAY	L	0.15	20.1	20 / 1	A	20 / 1	20.1	N	0.60	FIRE ALARM CONTROL PANEL	1
3	SPARE		0.00		20 / 1	B	20 / 1	20.1	N	0.24	LTG TIME CLOCK	4
5	RECEPT - LVL 1 BREEZEWAY	R	0.36	20.1	20 / 1	A	20 / 1			0.00	SPARE	6
7	RECEPT - LVL 2 BREEZEWAY	R	0.36	20.1	20 / 1	B	20 / 1	20.1	N	0.54	RECEPTS - ELECT RM	8
9	SPARE		0.00		20 / 1	A	20 / 1	20.1	R	0.72	RECEPTS - TELECOM	10
11	LTG - ELECT / MECH CLOSETS	L	0.24	20.1	20 / 1	B	20 / 1	20.1	R	0.36	RECEPTS - TELECOM	12
13	ELECT HEATER - FIRE SPRINKLER	C	1.50	20.1	20 / 1	A	20 / 1			0.00	SPARE	14
15	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.24	20.1	20 / 1	B	20 / 1	20.1	R	0.72	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-1	18
19	SPARE		0.00		20 / 1	B						20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20.1	20 / 1	A	15 / 2	20.2N	C	1.73	HEATPUMP WATER HTR - WH-2	22
23	TG - SITE	L	0.21	20.1	20 / 1	B						24
25	SPARE		0.00		20 / 1	A	20 / 1			0.00	SPARE	26
27	SPARE		0.00		20 / 1	B	20 / 1			0.00	SPARE	28
29	SPACE ONLY					A	30 / 2	30.2N	C	4.50	WH SWING TANK - SWH-1	30
31	SPACE ONLY					B						32
33	SPACE ONLY					A	20 / 1	20.1	N	0.36	CIRC PUMP CP-1 & MIX VALVE V-MV-1	34
35	SPACE ONLY					B	20 / 1	20.1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

		CONNECTED LOAD		DEMAND FACTOR	DEMAND LOAD	
L	= LIGHTING	0.60	kVA	125%	0.75	kVA
R	= RECEPTACLES	3.78	kVA	NEC 220.44	3.78	kVA
M	= MOTORS	0.24	kVA	100%	0.24	kVA
	PLUS 25% OF LARGEST MOTOR	0.24	kVA	25%	0.06	kVA
C	= CONTINUOUS	9.46	kVA	125%	11.82	kVA
N	= NON-CONTINUOUS	1.44	kVA	100%	1.44	kVA
K	= KITCHEN	0.00	kVA	75%	0.00	kVA

PANEL CONNECTED TOTAL: 15.52 kVA, 64.65 AMPS
PANEL DEMAND TOTAL: 18.09 kVA, 75.36 AMPS

NOTES:
A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (#):
1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER.

LOAD CENTER - 2 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O OR MCB: MLO — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN LTG RECEPTS SD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ERV, MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	5
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	6
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	30.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	DED RECEPT - AC UNIT (BY TENANT)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B				20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 5FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

LOAD CENTER - 3 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — M.L.O OR MCB: MLO — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20.1	20 / 1	A	40 / 2	40.2N	RANGE	2
3	GEN LTG RECEPTS SD (1)	20.1	20 / 1	B			"	4
5	RECEPTS, ERV, MEDIA PNL (1)	20.1	20 / 1	A	20 / 2	20.2	HEAT - BEDROOMS	5
7	REFRIGERATOR, EXHAUST HOOD (2)	20.1	20 / 1	B			"	6
9	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	A	20 / 2	30.2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20.1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	30 / 2	30.2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20.1	20 / 1	B			"	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20.1	20 / 1	A	20 / 1	20.1	WASHER (2)	18
19				B	20 / 1	20.1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 5FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-1	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.163					2
			/						
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1			1/15			3
			/						

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS. CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES. DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	kW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	240 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3

NOTES:
1. CONFIRM EXACT LOCATION WITH ARCHITECT
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 8 UNIT STACKED FLATS

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES BED 1	BED 2	BED 3	LIVING
A	2-BDRM	CH-0.84	CH-0.7		CH-1.8
B	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
C	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
D	2-BDRM	CH-0.84	CH-0.7		CH-1.8
E	2-BDRM	CH-0.7	CH-0.56		CH-1.12
F	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
G	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
H	2-BDRM	CH-0.7	CH-0.56		CH-1.12

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.
B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 24

BID SET

REGINNA M. BYERS — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/630 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE
& SPECS FOR ALL 'S' LIGHTING FIXTURES.

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
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Kirkland, WA 98034.
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13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 24

BID SET

GEORGINNA M. TAYLOR
STATE OF WASHINGTON
43761
REGISTERED
PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

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LUMINAIRE SCHEDULE

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ISSUE DATE 4/14/2023
JOB NO. 22016
SHEET NO.:

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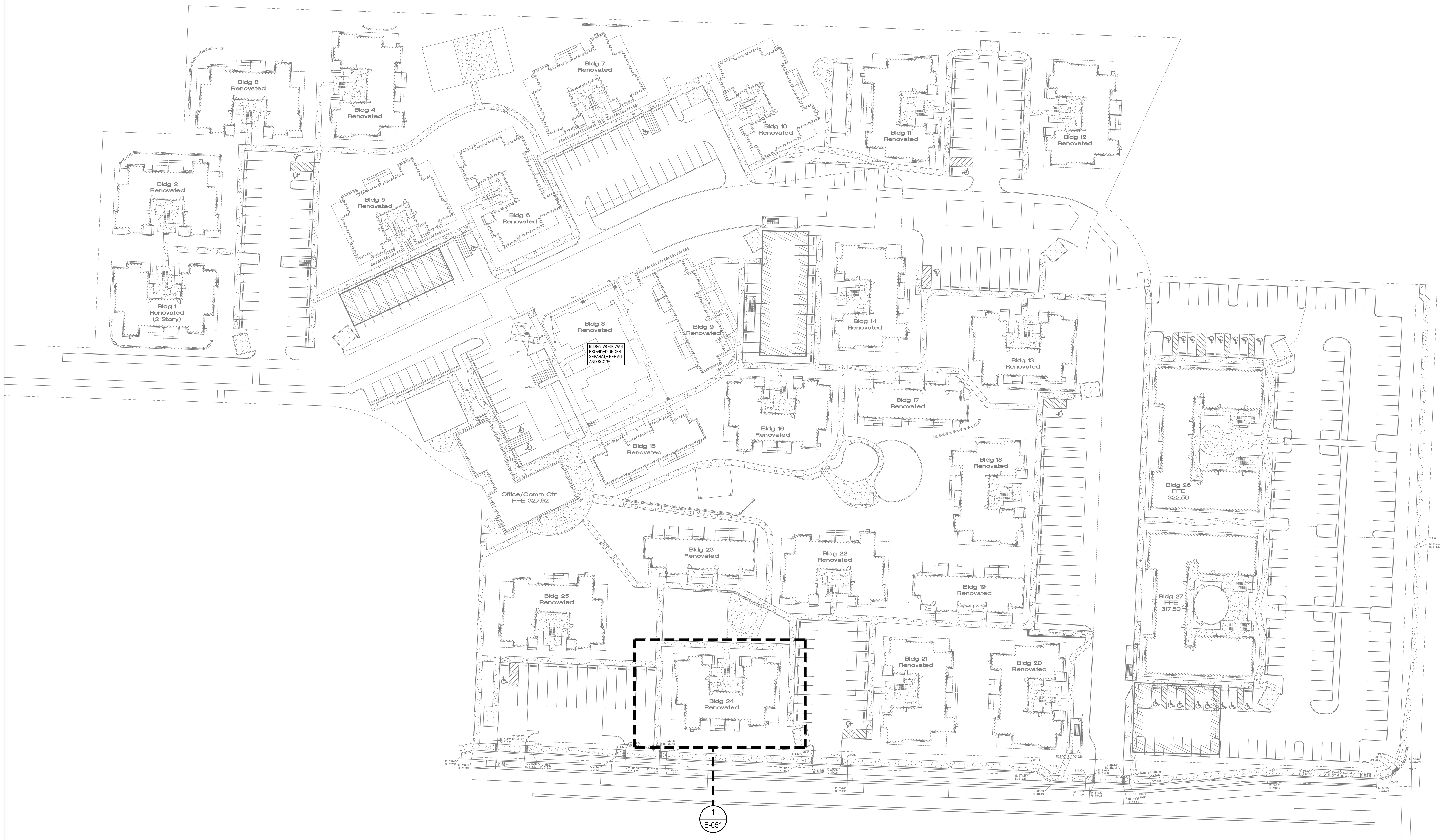

OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

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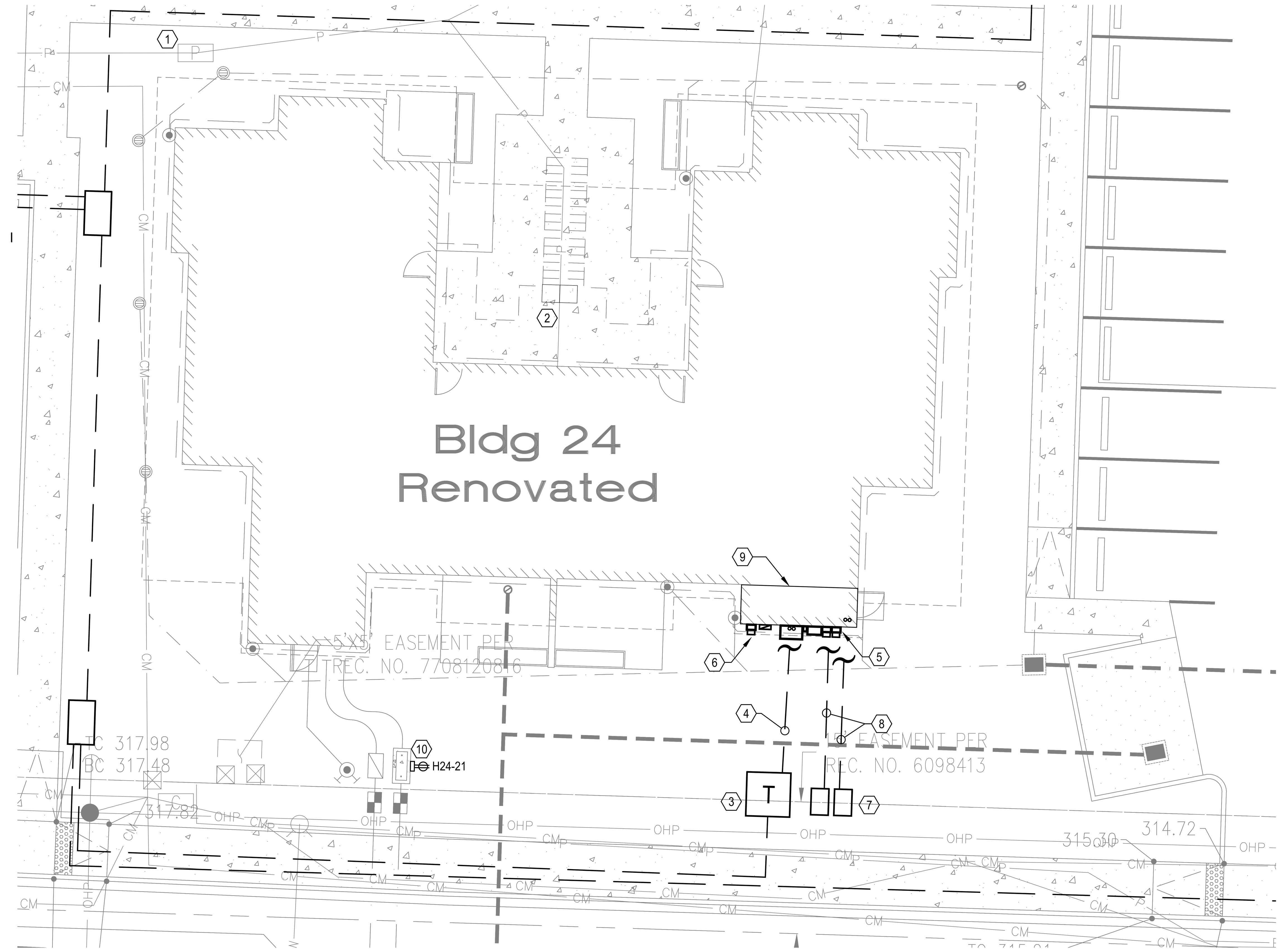
ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.



ELECTRICAL SITE PLAN - BUILDING 24

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

FLAG NOTES ⟨X⟩:

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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SMR Architects
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Seattle, WA 98104

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KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 24

BID SET

GEORGINNA M. ... STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

ELECTRICAL SITE PLAN - BUILDING 24

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E24-051

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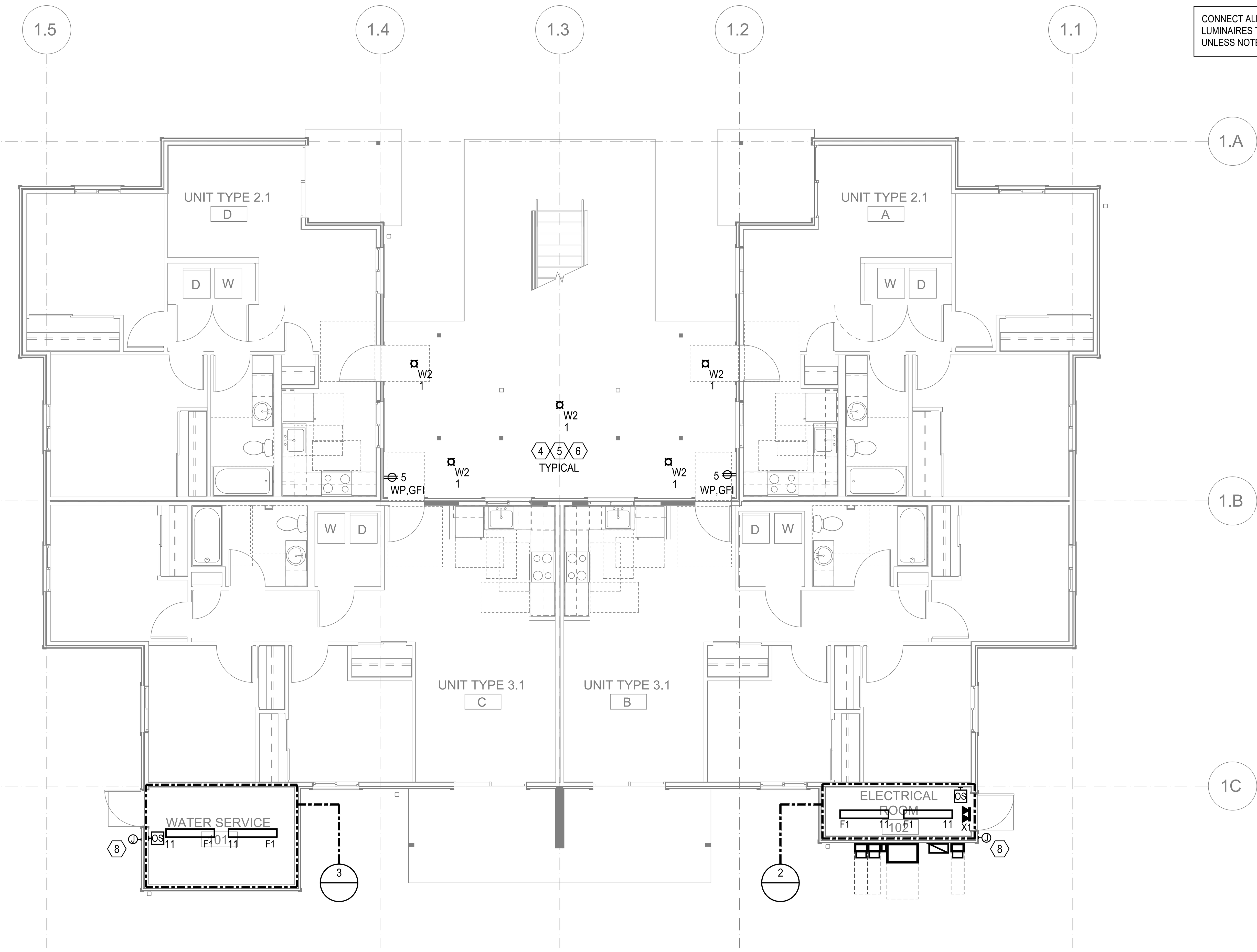


POWER AND LIGHTING PLAN - BUILDING 24 - LEVEL 1

SCALE: 3/16"=1'-0"

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H24 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES ⟨X⟩:

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.

2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.

3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).

4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.

5. PROVIDE (1) 220 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR LIGHTING FIXTURES TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-220-PB-S-SD

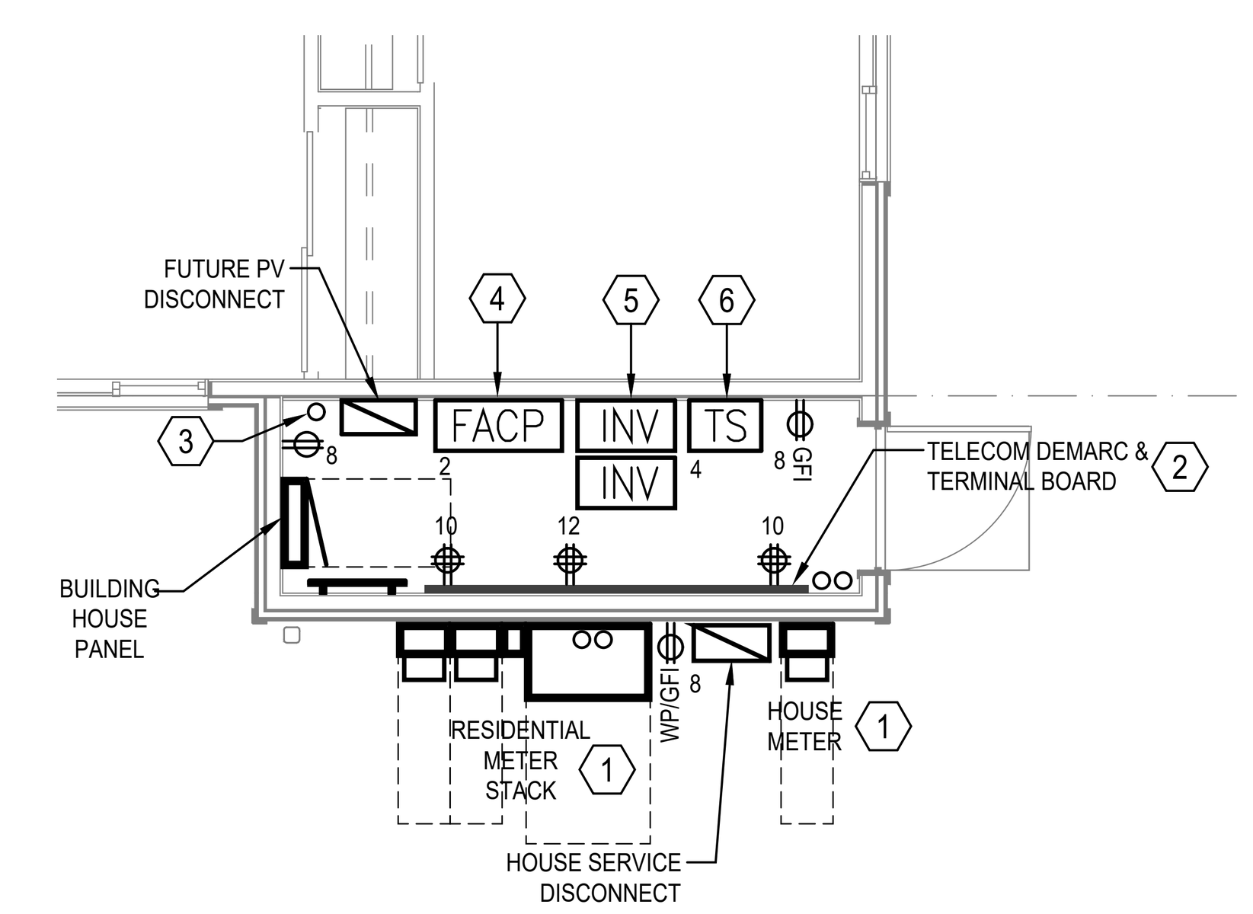
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.

7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.

8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.

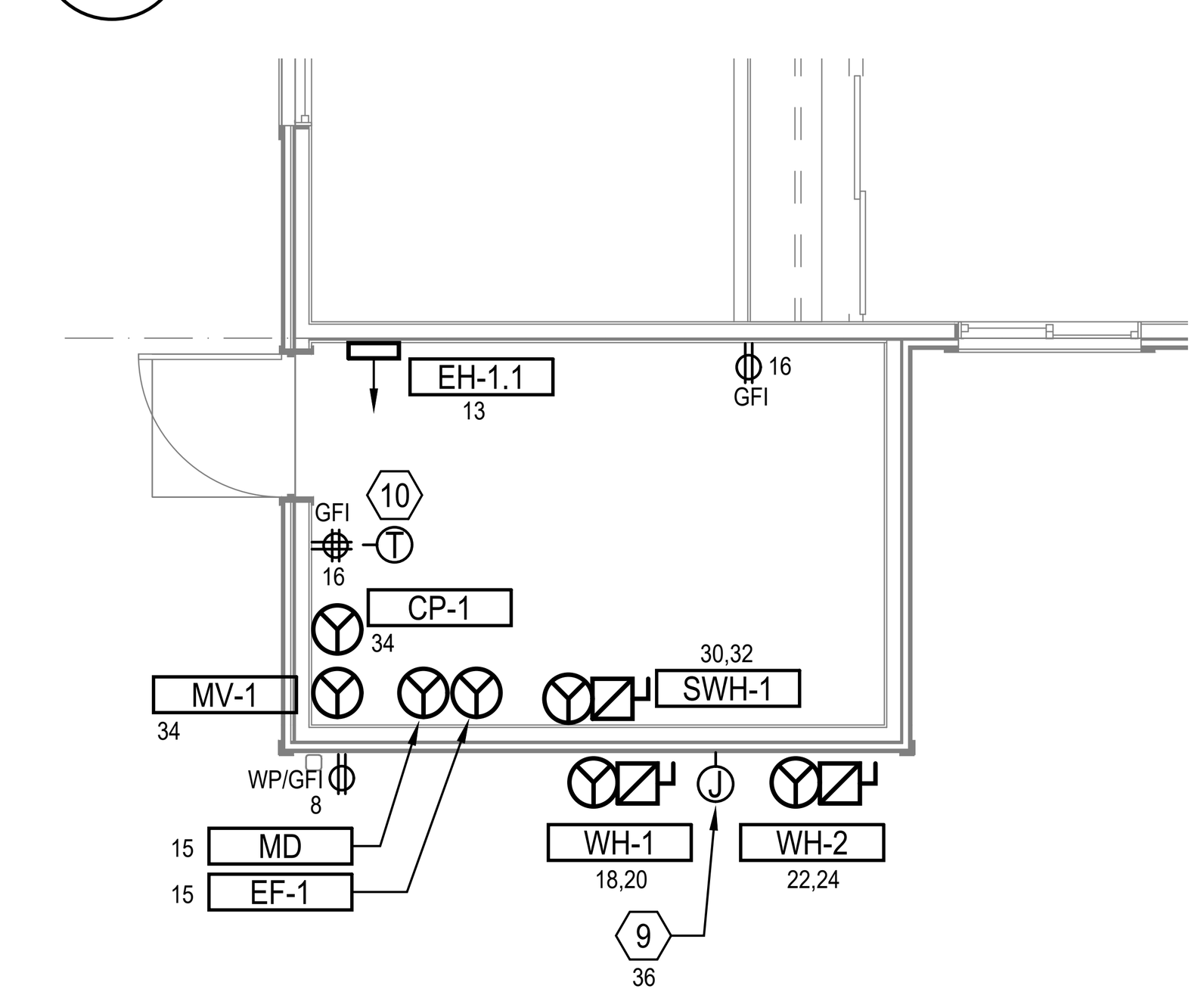
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.

10. ELECTRICAL CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



2 E101 ELECTRICAL ROOM

1/4"=1'-0"



3 E101 WATER ROOM

1/4"=1'-0"

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

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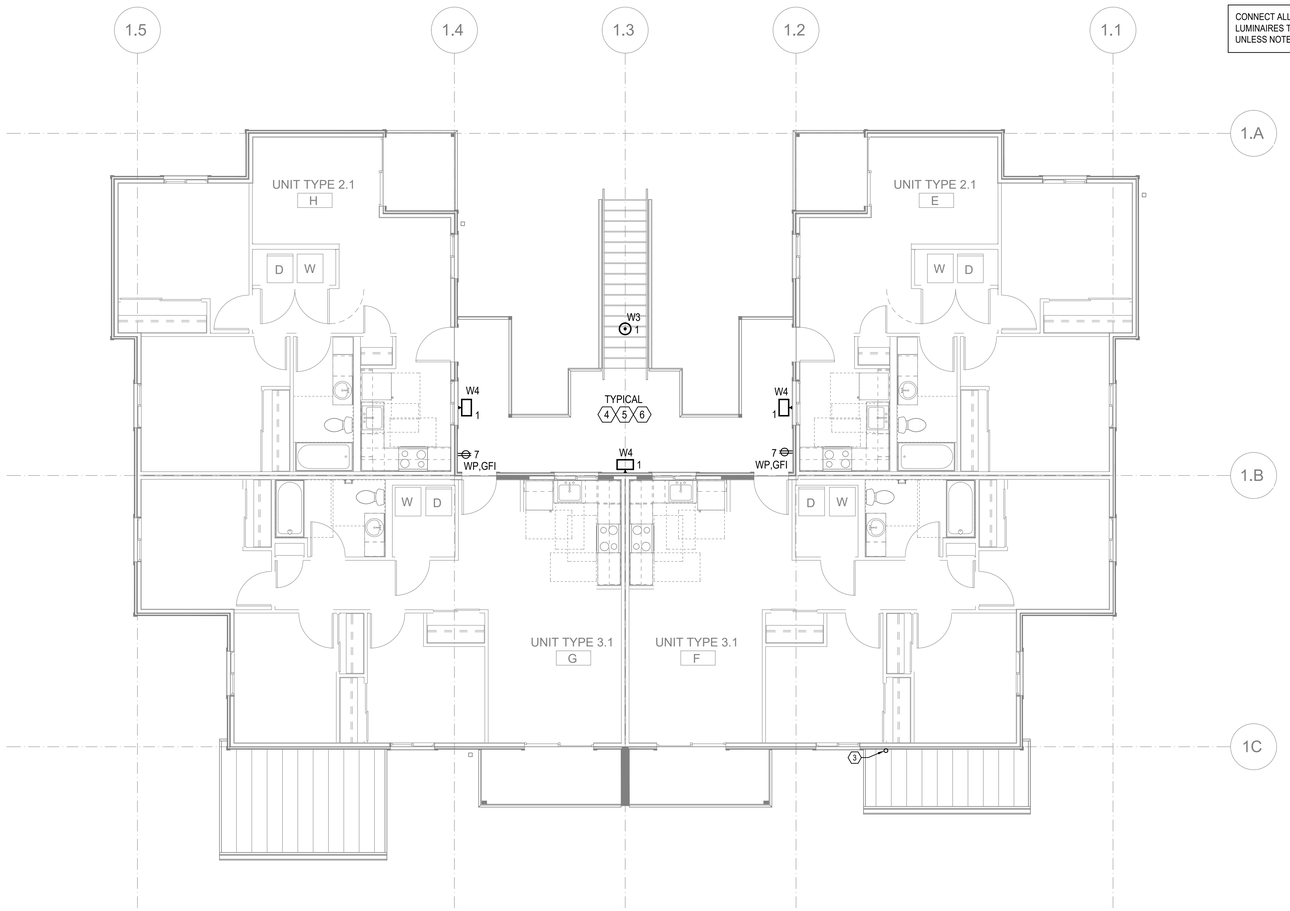
E24-101

10/7/2021 7:33:34 AM



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5. ALL BREEZEWAY AND STAIR LIGHTING TO BE FED BY EMERGENCY LIGHTING INVERTER. SEE LEVEL 1 PLAN FOR LOCATION AND DETAILS.
6. ALL BREEZEWAY LIGHTING TO HAVE AUTOMATIC ON/OFF CONTROL VIA TIME CLOCK. SEE LEVEL 1 PLAN FOR LOCATION.

POWER AND LIGHTING PLAN - BUILDING 24 - LEVEL 2

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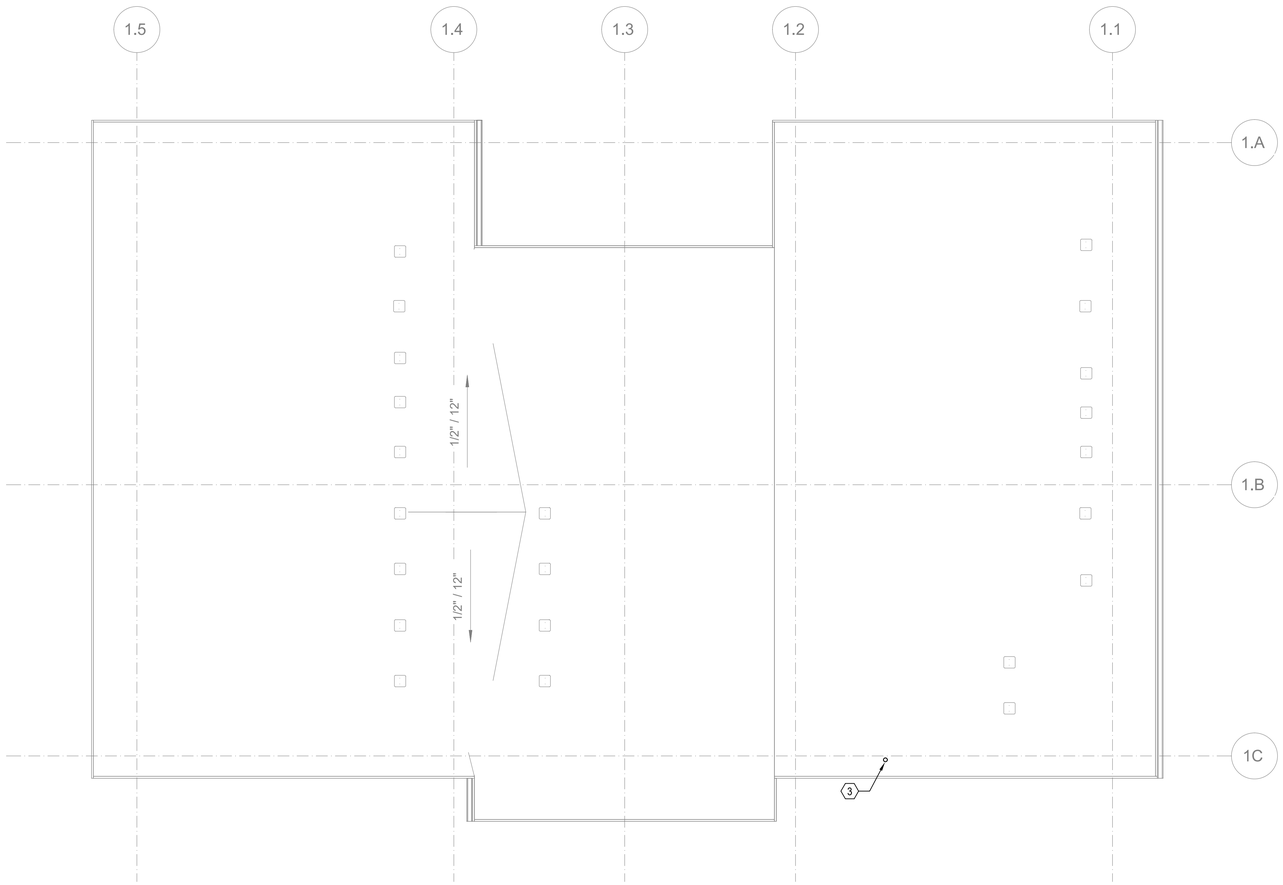
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E24-102



POWER PLAN - BUILDING 24 - ROOF

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POWER PLAN - BUILDING 24 - ROOF

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E24-103

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	CONDUCTORS PER SET: AL OR CU	PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION);
CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).

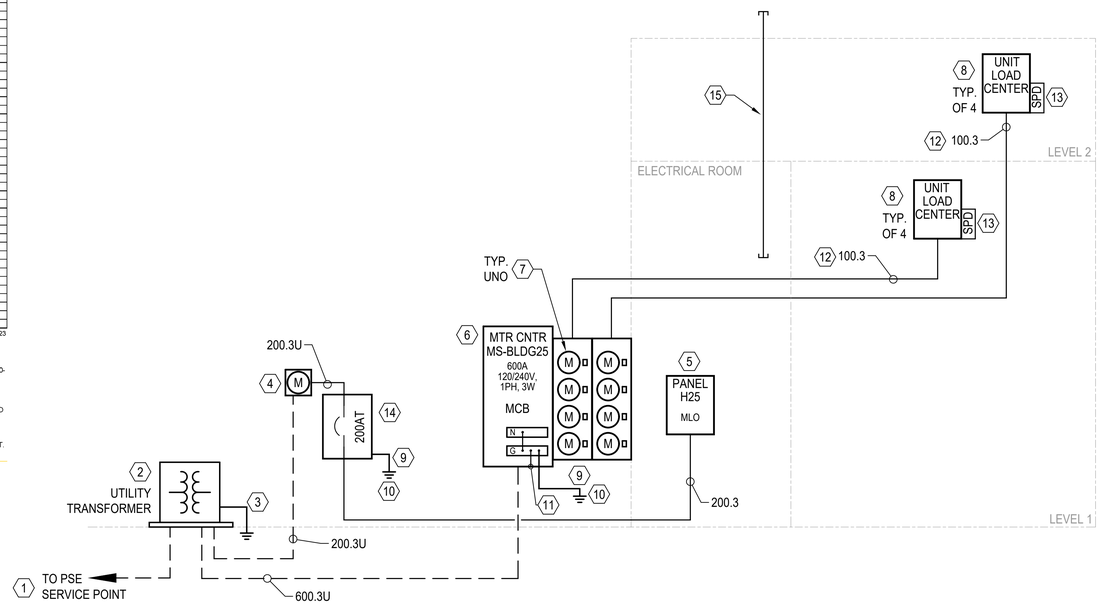
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).

C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS, WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.

D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH 'U' ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.



SINGLE LINE DIAGRAM

SCALE: NTS

FLAG NOTES (X):

1. TO CONNECTION POINT WITH PUGET SOUND ENERGY (PSE). COORDINATE EXACT LOCATION, ROUTING AND REQUIREMENTS WITH PSE. ALL WORK TO BE PER PSE REQUIREMENTS. SEE SITE PLAN FOR ALTERATIONS TO EXISTING UTILITY ROUTING AROUND PROJECT BUILDING.
2. NEW EXTERIOR PAD-MOUNTED UTILITY TRANSFORMER. FINAL CONNECTIONS TO TRANSFORMER BY PSE. CONTRACTOR TO VISIBLY MARK EACH CONDUCTOR WITH PHASE AND SPECIFIC SERVICE IT FEEDS AND EXTEND EXCESS CABLE PER PSE STANDARDS.
3. UTILITY SERVICE GROUNDING SHALL BE IN ACCORDANCE WITH NEC 250.24(A) AND PSE REQUIREMENTS.
4. 200A, 120/240V, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS FOR BUILDING HOUSE LOADS.
5. NEW PANELBOARD FOR BUILDING HOUSE LOADS.
6. PROVIDE EXTERIOR RATED RESIDENTIAL METER CENTER FOR INDIVIDUAL APARTMENT SERVICES. METER CENTER TO BE SERVICE ENTRANCE RATED WITH MAIN BREAKER. METER SECTION TO HAVE (8) 100AMP METERS WITH INDIVIDUAL DISCONNECTS.
7. 100A, 1-PHASE UTILITY METER SOCKET INSTALLED PER PSE REQUIREMENTS. PROVIDE WITH 100AT BREAKER ADJACENT TO EACH METER SOCKET FOR UNIT FEEDERS.
8. 100A, 120/240V, 1-PHASE LOAD CENTER, FOR EACH APARTMENT UNIT.
9. PROVIDE GROUNDING ELECTRODE COPPER CONDUCTORS PER NEC TABLE 250.66 AND NEC 050.62, 250.64, 250.66, 250.68, 250.70.
10. PROVIDE GROUNDING CONNECTIONS TO ALL AVAILABLE GROUNDING ELECTRODE(S) PER NEC 250.50 & 250.52 (A).
11. EQUIPMENT TO BE PROVIDED WITH FACTORY INSTALLED BONDING PLATE PER NEC 250.28, 250.102 AND TABLE 250.102(C)(1).
12. INSTALL ONE 100A, 240V, 3-WIRE CABLING WITH GROUNDING CONDUCTOR, IN CONDUIT, FROM THE RESIDENTIAL METER STACK TO EACH DWELLING UNIT LOAD CENTER.
13. PROVIDE SURGE PROTECTION DEVICE IN EACH DWELLING UNIT LOAD CENTER TO MEET REQUIREMENT OF NEC 230.67.
14. PROVIDE, 200 AMP, SERVICE ENTRANCE RATED MAIN DISCONNECT WITH CIRCUIT BREAKER FOR HOUSE SERVICE. DISCONNECT TO BE EXTERIOR RATED AND WALL MOUNTED TO BUILDING FACADE.
15. PROVIDE (1) 2-INCH CONDUIT PATHWAY FROM ELECTRICAL ROOM TO ROOF FOR FUTURE PV ARRAY. CAP, SEAL, AND MARK ALL CONDUIT ENDS.

LOAD CALCULATIONS - BLDG 25

UNIT TYPE: 2BR - 2.1 | **AREA (SF): 782** | 4/6/2023
DEMAND LOAD (kVA): 17.93 => 74.7 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	2.35	kVA
SMALL-APPLIANCE CKTS [220.52(A)] = 2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] = 1	CKTS x 1500VA	=	1.50	kVA
	SUBTOTAL (CONNECTED)	=	6.85	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:				
0 - 3,000VA:	100%	=	3.00	kVA
3,001VA - 120,000VA:	35%	=	1.35	kVA
> 120,000VA:	25%	=	0.00	kVA
	GENERAL LIGHTING LOAD - DEMAND	=	**4.35**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:		75%			
		GENERAL APPLIANCE LOAD - DEMAND		=	**1.65 kVA**

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	**0.14 kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51] = 3.91 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA
		TOTAL DWELLING UNIT LOAD PER NEC 220, PART III		=	**23.54 kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.48	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10KVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	5.39	kVA

ELECTRIC HEAT AND AC [220.82(C)]:

LARGEST LOAD OF OPTIONS: < 4 ELECT SPACE HEATERS: 65% NAMEPLATE		=	2.54	kVA
	TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	**17.93**	**kVA**

UNIT TYPE: 3BR - 3.1 | **AREA (SF): 906** | 4/6/2023
DEMAND LOAD (kVA): 18.49 => 77.0 AMPS AT 240 V 1 PH

DWELLING UNIT CALCULATIONS: NEC 220, PART III:

GENERAL LIGHTING LOADS [220.12] =	AREA x 3VA/SF	=	2.72	kVA
SMALL-APPLIANCE CKTS [220.52(A)] = 2	CKTS x 1500VA	=	3.00	kVA
LAUNDRY CKTS [220.52(B)] = 1	CKTS x 1500VA	=	1.50	kVA
	SUBTOTAL (CONNECTED)	=	7.22	kVA
LTG LOAD DEMAND FACTORS PER NEC TABLE 220.42 FOR DWELLING UNITS:				
0 - 3,000VA:	100%	=	3.00	kVA
3,001VA - 120,000VA:	35%	=	1.48	kVA
> 120,000VA:	25%	=	0.00	kVA
	GENERAL LIGHTING LOAD - DEMAND	=	**4.48**	**kVA**

FIXED IN PLACE APPLIANCES [220.53]:

TYPE	QTY		LOAD (kVA EACH)		
REFRIGERATOR	1	AT	0.7	=	0.70 kVA
RANGE HOOD	1	AT	0.3	=	0.30 kVA
MICROWAVE		AT		=	0.00 kVA
DISHWASHER		AT		=	0.00 kVA
WASHER	1	AT	1.2	=	1.20 kVA
GARBAGE DISPOSAL		AT		=	0.00 kVA
WATER HEATER		AT		=	0.00 kVA
		SUBTOTAL (CONNECTED)		=	2.20 kVA
APPLIANCE DEMAND FACTOR [220.53]:		75%			
		GENERAL APPLIANCE LOAD - DEMAND		=	**1.65 kVA**

MOTORS [220.60]:

	QTY		LOAD (kVA EACH)		
TOILET EXHAUST FAN		AT		=	0.00 kVA
ERV UNIT	1	AT	0.11	=	0.11 kVA
KITCHEN EXHAUST FAN		AT		=	0.00 kVA
+25% OF LARGEST MOTOR				=	0.03 kVA
		GENERAL MOTOR LOAD - DEMAND		=	**0.14 kVA**

100% AC EQUIP [220.50] / SPACE HEATING [220.51] = 4.53 kVA

	QTY		LOAD (kVA EACH)		
CLOTHES DRYER [220.54]	1	AT	5.5	=	5.50 kVA
ELECTRIC COOKTOP [220.55]		AT		=	0.00 kVA
ELECTRIC OVEN [220.55]		AT		=	0.00 kVA
ELECTRIC RANGE [220.55]	1	AT	8.8	=	8.00 kVA
		TOTAL DWELLING UNIT LOAD PER NEC 220, PART III		=	**24.29 kVA**

DWELLING UNIT OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED LOAD W/O HEATING AND AC [220.82]		=	23.86	kVA
DEMAND FACTORS PER NEC 220.82(B):				
0 - 10KVA:	100%	=	10.00	kVA
> 10 kVA:	40%	=	5.54	kVA

ELECTRIC HEAT AND AC [220.82(C)]:

LARGEST LOAD OF OPTIONS: < 4 ELECT SPACE HEATERS: 65% NAMEPLATE		=	2.94	kVA
	TOTAL DWELLING UNIT LOAD PER OPTIONAL CALC: NEC 220, PART IV	=	**18.49**	**kVA**

RESIDENTIAL LOAD CALCULATIONS - SERVICE TOTAL | **MS - 8 unit STACK** | 4/6/2023
DEMAND LOAD (kVA): 95.86 => 399.4 AMPS AT 240 V 1 PH

UNIT TYPE	QTY ON METER STACK	GEN LTG LOAD (kVA)	APPLIANCES LOAD (kVA)	MOTOR LOAD (kVA)	SPACE HEATING/ AC LOAD (kVA)	CLOTHES DRYERS QTY	CLOTHES DRYERS LOAD (kVA)	COOKING APPLIANCES 1.6< X < 3.6kW QTY	1.6< X < 3.6kW LOAD (kVA)	3.6kW < X < 8.76kW QTY	3.6kW < X < 8.76kW LOAD (kVA)	8.76kW < X < 12kW QTY	8.76kW < X < 12kW LOAD (kVA)
2BR - 2.1	4	27.38	8.80	0.44	15.64	4	22.00	0	0.00	0	0.00	4	35.20
3BR - 3.1	4	28.87	8.80	0.44	18.12	4	22.00	0	0.00	0	0.00	4	35.20
0								0	0.00	0	0.00	0	0.00
TOTALS:	8	56.26	17.60	0.88	33.76	8	44.00	0	0.00	0	0.00	8	70.40
	ADDITIONAL 25% OF LARGEST MOTOR:			0.03									

METER STACK OPTIONAL CALCULATIONS: NEC 220, PART IV:

TOTAL CONNECTED METER STACK LOAD	=	222.92	kVA
DEMAND FACTOR FROM TABLE 220.84 = 43%			
TOTAL METER STACK LOAD PER NEC 220, PART IV OPTIONAL CALC	=	**95.86**	**kVA**

KIRKLAND HEIGHTS - 8 UNIT STACK FLAT (REHAB)
PRELIMINARY LOAD CALCULATIONS 4/6/2023

PRELIMINARY LOAD CALCULATIONS

RESIDENTIAL SERVICE:

RESIDENTIAL UNITS (QTY = 8):	95.86 kVA
(SEE ATTACHED CALCS)	
ALL DWELLING UNITS WILL BE PROVIDED WITH UTILITY METERS.	
RESIDENTIAL TOTAL:	95.86 kVA
	399.40 AMPS @ 120/240V, 1-PHASE
	PROVIDE 600A RESIDENTIAL METER CENTER

MAIN HOUSE SERVICE:

HOUSE (COMMON AREAS):	
LIGHTING - Breezeway +Interior:	1.5 kVA
LIGHTING - SITE:	1.5 kVA
GENERAL RECEPTACLES:	4.0 kVA
MECHANICAL:	1.0 kVA
ELECT HEAT (WATER RMS):	1.0 kVA
CENTRAL HOT WATER (HPWH)	5.6 kVA
ELECT SWING TANK	4.5 kVA
HEAT TRACE	0.5 kVA
MISCELLANEOUS:	2.5 kVA
EV CHARGING (2):	16.6 kVA
HOUSE TOTAL:	38.71 kVA
	161.30 AMPS @ 120/240V, 1-PHASE
WITH 25% SPARE CAPACITY	48.39 kVA
	201.6208 AMPS @ 120/240V, 1-PHASE
	PROVIDE 200A HOUSE SERVICE
TOTAL BUILDING SERVICE:	144.25 kVA
	601.03 AMPS @ 120/240V, 1-PHASE

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 25

BID SET

JOHANNA M. [illegible] STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE

SINGLE LINE DIAGRAM AND LOAD CALCS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E25-003

10/7/2021 7:33:34 AM

FEEDER/ CIRCUIT SCHEDULE

MARK	CONDUIT (#SETS) SIZE	AL OR CU	CONDUCTORS PER SET PHASE / NEUTRAL (N) (QTY) SIZE	GROUND (1 PER SET UNO)
600.3U	(2) 4-INCH	AL	(3) 500 KCMIL	NOTE #1
600.3	(2) 4-INCH	AL	(3) 500 KCMIL	#2/0
500.4	(2) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#1/0
500.3	(2) 3-INCH	AL	(3) 350 KCMIL	#1/0
450.4	(2) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#1/0
450.3	(2) 3-INCH	AL	(3) 300 KCMIL	#1/0
400.3U	(2) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
400.3	(2) 3-INCH	AL	(3) 250 KCMIL	#1
350.4	(1) 4-INCH	AL	(3) 700 KCMIL / (1) 700 KCMIL N	#1
350.3	(1) 4-INCH	AL	(3) 700 KCMIL	#1
300.4	(1) 4-INCH	AL	(3) 500 KCMIL / (1) 500 KCMIL N	#2
300.3	(1) 4-INCH	AL	(3) 500 KCMIL	#2
250.4	(1) 3-INCH	AL	(3) 350 KCMIL / (1) 350 KCMIL N	#2
250.3	(1) 3-INCH	AL	(3) 350 KCMIL	#2
225.4	(1) 3-INCH	AL	(3) 300 KCMIL / (1) 300 KCMIL N	#2
225.3	(1) 3-INCH	AL	(3) 300 KCMIL	#2
200.4	(1) 3-INCH	AL	(3) 250 KCMIL / (1) 250 KCMIL N	#4
200.3U	(1) 3-INCH	AL	(3) 250 KCMIL	NOTE #1
200.3	(1) 3-INCH	AL	(3) 250 KCMIL	#4
175.4	(1) 3-INCH	AL	(3) #4/0 / (1) #4/0 N	#4
175.3	(1) 3-INCH	AL	(3) #4/0	#4
150.4	(1) 2-INCH	AL	(3) #3/0 / (1) #3/0 N	#4
150.3	(1) 2-INCH	AL	(3) #3/0	#4
125.4	(1) 2-INCH	AL	(3) #2/0 / (1) #2/0 N	#4
125.3	(1) 2-INCH	AL	(3) #2/0	#4
100.4	(1) 2-INCH	AL	(3) #1/0 / (1) #1/0 N	#6
100.3	(1) 2-INCH	AL	(3) #1/0	#6
90.4	(1) 1.5-INCH	CU	(3) #2 / (1) #2 N	#8
90.3	(1) 1.5-INCH	CU	(3) #2	#8
80.4	(1) 1.5-INCH	CU	(3) #3 / (1) #3 N	#8
80.3	(1) 1.5-INCH	CU	(3) #3	#8
70.4	(1) 1.5-INCH	CU	(3) #4 / (1) #4 N	#8
70.3	(1) 1-INCH	CU	(3) #4	#8
60.4	(1) 1-INCH	CU	(3) #4 / (1) #4 N	#10
60.3	(1) 1-INCH	CU	(3) #4	#10
60.2N	(1) 1-INCH	CU	(2) #4 / (1) #4 N	#10
60.2	(1) 1-INCH	CU	(2) #4	#10
60.1	(1) 1-INCH	CU	(1) #4 / (1) #4 N	#10
50.4	(1) 1-INCH	CU	(3) #6 / (1) #6 N	#10
50.3	(1) 1-INCH	CU	(3) #6	#10
50.2N	(1) 1-INCH	CU	(2) #6 / (1) #6 N	#10
50.2	(1) 1-INCH	CU	(2) #6	#10
50.1	(1) 1-INCH	CU	(1) #6 / (1) #6 N	#10
40.4	(1) 1-INCH	CU	(3) #8 / (1) #8 N	#10
40.3	(1) 1-INCH	CU	(3) #8	#10
40.2N	(1) 1-INCH	CU	(2) #8 / (1) #8 N	#10
40.2	(1) 1-INCH	CU	(2) #8	#10
40.1	(1) 1-INCH	CU	(1) #8 / (1) #8 N	#10
30.4	(1) 1-INCH	CU	(3) #10 / (1) #10 N	#10
30.3	(1) 1-INCH	CU	(3) #10	#10
30.2N	(1) 1-INCH	CU	(2) #10 / (1) #10 N	#10
30.2	(1) 1-INCH	CU	(2) #10	#10
30.1	(1) 1-INCH	CU	(1) #10 / (1) #10 N	#10
20.4	(1) 1-INCH	CU	(3) #12 / (1) #12 N	#12
20.3	(1) 1-INCH	CU	(3) #12	#12
20.2N	(1) 1-INCH	CU	(2) #12 / (1) #12 N	#12
20.2	(1) 1-INCH	CU	(2) #12	#12
20.1	(1) 1-INCH	CU	(1) #12 / (1) #12 N	#12

GENERAL SCHEDULE NOTES: 4/6/2023

A. AL= ALUMINUM (STABILOY CONDUCTORS WITH XHHW-2 INSULATION); CU= COPPER (COPPER CONDUCTORS WITH THHN/THWN INSULATION).
B. FEEDERS RATED OVER 100 AMPS ARE BASED ON TERMINALS RATED FOR 75-DEGREES C (167-DEGREES F) AS PER NEC 110.14(C)(1). FEEDERS RATED 100 AMPS AND LOWER ARE BASED ON TERMINALS RATED FOR 60-DEGREES C (140-DEGREES F).
C. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS. WHERE MULTIPLE SETS OF PARALLEL CONDUIT ARE INDICATED, PROVIDE ONE GROUND WIRE IN EACH SET.
D. SEE BRANCH CIRCUIT LENGTHS LIMITS SCHEDULE FOR ADDITIONAL CONDUCTOR SIZING REQUIREMENTS TO MEET ENERGY CODE VOLTAGE DROP REQUIREMENTS ON BRANCH CIRCUITS.

SPECIFIC SCHEDULE NOTES:

1. MARKS ENDING WITH "U" ARE UTILIY SECONDARY SERVICE FEEDERS FROM THE UTILITY ELECTRICAL VAULT. NO EQUIPMENT GROUNDING CONDUCTORS TO BE PROVIDED UNO.

BRANCH CIRCUIT LENGTH LIMITS

VOLTAGE	AMPS ON CKT NOT TO EXCEED	KVA ON CKT NOT TO EXCEED	MAXIMUM CIRCUIT LENGTH (FT) BASED ON CONDUCTOR SIZES INDICATED #12 AWG	#10 AWG	#8 AWG	#6 AWG
120V / 1-PHASE	2	0.24	505	845	1295	2055
	3	0.36	335	560	865	1370
	4	0.48	250	420	645	1025
	6	0.72	165	275	430	685
	8	0.96	125	210	320	510
	10	1.20	100	165	255	410
	12	1.44	80	140	215	340
	14	1.68	70	120	185	290
	16	1.92	60	105	160	255
	18	2.16	55	90	140	225
	20	2.40	50	80	125	205
	25	3.00		65	100	160
	30	3.60		55	85	135
208V/ 1-PHASE	2	0.42	880	1465	2250	3560
	4	0.83	440	730	1125	1780
	6	1.25	290	485	750	1185
	8	1.66	220	365	560	890
	10	2.08	175	290	450	710
	12	2.50	145	240	375	590
	14	2.91	125	205	320	505
	16	3.33	110	180	280	445
	18	3.74	95	160	250	395
	20	4.16	85	145	225	355
	25	5.20		115	180	285
	30	6.24		95	150	235
	35	7.28			125	200
	40	8.32			110	175
	45	9.36				155
	50	10.40				140
208V/ 3-PHASE	2	0.72	1000	1695	2600	4120
	4	1.44	500	845	1300	2060
	6	2.16	335	565	865	1370
	8	2.88	250	420	650	1030
	10	3.60	200	335	520	820
	12	4.32	165	280	430	685
	14	5.04	145	240	370	585
	16	5.76	125	210	325	515
	18	6.48	110	185	285	455
	20	7.21	100	165	260	410
	25	9.01		135	205	325
	30	10.81		110	170	270
	35	12.61			145	235
	40	14.41			130	205
	45	16.21				180
	50	18.01				160

NOTES: 4/6/2023

A. CIRCUIT LENGTHS INDICATED IN THIS SCHEDULE ARE INTENDED TO LIMIT TOTAL VOLTAGE DROP ON BRANCH CIRCUITS TO 3% AND ARE BASED ON COPPER CONDUCTORS.
B. WHERE CONDUCTORS ARE INCREASED IN SIZE TO LIMIT VOLTAGE DROP, EQUIPMENT GROUNDING CONDUCTOR SHALL ALSO BE INCREASED IN SIZE PROPORTIONATELY PER NEC 250.122(B).

PANEL SCHEDULES

PANEL H25 — FED FROM: XFR — LOCATION: ELECTRICAL ROOM
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — SURFACE-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 200 AMPS — MLO OR MCB: MLO — 200 AMPS

CKT #	DESCRIPTION	CONN TYPE	CONN kVA	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	CONN TYPE	CONN kVA	DESCRIPTION	CKT #
1	LTG - BREEZEWAY	L	0.15	20-1	20 / 1	A	20 / 1	20-1	N	0.60	FIRE ALARM CONTROL PANEL	2
3	SPARE		0.00		20 / 1	B	20 / 1	20-1	N	0.24	LTG TIME CLOCK	4
5	RECEPT - LVL 1 BREEZEWAY	R	0.36	20-1	20 / 1	A	20 / 1			0.00	SPARE	6
7	RECEPT - LVL 2 BREEZEWAY	R	0.36	20-1	20 / 1	B	20 / 1	20-1	R	0.54	RECEPTS - ELECT RM	8
9	SPARE		0.00		20 / 1	A	20 / 1	20-1	R	0.72	RECEPTS - TELECOM	10
11	LTG - ELECT / MECH CLOSETS	L	0.24	20-1	20 / 1	B	20 / 1	20-1	R	0.36	RECEPTS - TELECOM	12
13	ELECT HEATER - FIRE SPRINKLER	C	1.50	20-1	20 / 1	A	20 / 1			0.00	SPARE	14
15	EXHAUST FAN EF-1 & MOTO DAMPER	M	0.24	20-1	20 / 1	B	20 / 1	20-1	R	0.72	RECEPTS - MECH RM	16
17	SPARE		0.00		20 / 1	A	15 / 2	20-2N	C	1.73	HEATPUMP WATER HTR - WH-1	18
19	SPARE		0.00		20 / 1	B						20
21	HEAT TRACE - WATER CONNECTION	N	0.24	20-1	20 / 1	A	15 / 2	20-2N	C	1.73	HEATPUMP WATER HTR - WH-2	22
23	SPARE		0.00		20 / 1	B						24
25	LTG - SITE POLES	L	0.50	20-1	20 / 1	A	20 / 1			0.00	SPARE	26
27	SPARE		0.00		20 / 1	B	20 / 1			0.00	SPARE	28
29	SPACE ONLY					A	30 / 2	30-2N	C	4.50	MH SWING TANK - SWH-1	30
31	SPACE ONLY					B						32
33	SPACE ONLY					A	20 / 1	20-1	N	0.36	CIRC PUMP CP-1 & MIX VALVE MV-1	34
35	SPACE ONLY					B	20 / 1	20-1	R	0.72	HEAT TRACE - HEATPUMP WATER LINE	36
37	SPACE ONLY					A					SPACE ONLY	38
39	SPACE ONLY					B					SPACE ONLY	40
41	SPACE ONLY					A					SPACE ONLY	42

		CONNECTED LOAD		DEMAND FACTOR	DEMAND LOAD	
L	= LIGHTING	0.69	kVA	125%	0.86	kVA
R	= RECEPTACLES	3.78	kVA	NEC 220.44	3.78	kVA
M	= MOTORS	0.24	kVA	100%	0.24	kVA
	PLUS 25% OF LARGEST MOTOR	0.24	kVA	25%	0.06	kVA
C	= CONTINUOUS	9.46	kVA	125%	11.82	kVA
N	= NON-CONTINUOUS	1.44	kVA	100%	1.44	kVA
K	= KITCHEN	0.00	kVA	75%	0.00	kVA

PANEL CONNECTED TOTAL: 15.81 kVA, 65.03 AMPS
PANEL DEMAND TOTAL: 18.20 kVA, 75.64 AMPS

NOTES:
A. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION BREAKER

LOAD CENTER - 2 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — MLO OR MCB: MLO — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20-1	20 / 1	A	40 / 2	40-2N	RANGE	2
3	GEN LTG, RECEPTS, SD (1)	20-1	20 / 1	B			"	4
5	RECEPTS, ERV, MEDIA PNL (1)	20-1	20 / 1	A	20 / 2	20-2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20-1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	A	20 / 2	30-2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	30 / 2	30-2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20-1	20 / 1	B			"	16
17	DED RECEPT - UNIT (BY TENANT)	20-1	20 / 1	A	20 / 1	20-1	WASHER (2)	18
19				B				20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 5FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

LOAD CENTER - 3 BEDROOM — FED FROM: METER STACKS — LOCATION: DWELLING UNITS
NORMAL POWER — VOLTAGE: 120 / 240 V — 1-PHASE, 3-WIRE — FLUSH-MOUNTED
A/C: SEE SINGLE-LINE DIAGRAM — BUS RATING: 100 AMPS — MLO OR MCB: MLO — 100 AMPS

CKT #	DESCRIPTION	CKT TAG	CB AMPS/ #P	PH	CB AMPS/ #P	CKT TAG	DESCRIPTION	CKT #
1	BATHROOMS (1)	20-1	20 / 1	A	40 / 2	40-2N	RANGE	2
3	GEN LTG, RECEPTS, SD (1)	20-1	20 / 1	B			"	4
5	RECEPTS, ERV, MEDIA PNL (1)	20-1	20 / 1	A	20 / 2	20-2	HEAT - BEDROOMS	6
7	REFRIGERATOR, EXHAUST HOOD (2)	20-1	20 / 1	B			"	8
9	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	A	20 / 2	30-2	HEAT - LIVING ROOM	10
11	GENERAL KITCHEN APPLIANCE (1)	20-1	20 / 1	B			"	12
13	BEDROOM 1 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	30 / 2	30-2	DRYER (2)	14
15	BEDROOM 2 RECEPTS, LTS, SD (1)	20-1	20 / 1	B			"	16
17	BEDROOM 3 RECEPTS, LTS, SD (1)	20-1	20 / 1	A	20 / 1	20-1	WASHER (2)	18
19				B	20 / 1	20-1	DED RECEPT - AC UNIT (BY TENANT)	20
21	SURGE PROTECTION DEVICE		20 / 2	A				22
23	"			B				24

NOTES:
A. SEE RESIDENTIAL DWELLING UNIT CALCULATIONS ON DWG FOR RESIDENTIAL LOAD CENTER CALCULATIONS.
B. SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUIT AND CONDUCTOR INFORMATION PER CIRCUIT TAG.

CIRCUIT NOTES (X):
1. PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.
2. PROVIDE COMBO 5mA GFCI/ COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER WHERE RECEPTACLE IS WITHIN 5FT OF SINK EDGE. OTHERWISE PROVIDE COMBO ARC-FAULT CIRCUIT INTERRUPTER BREAKER.

MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL/ PLUMBING EQUIPMENT CONNECTION SCHEDULE

MARK	DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS VOLTAGE/ PH	kW	HP	MCA	MOCP	ALTERNATE POWER	NOTES:
WH-1	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
WH-2	HEAT PUMP WATER HEATER	WATER SVC ROOM	208 / 1			7.2	15		
			/						
SWH-1	ELECT SWING TANK	WATER SVC ROOM	208 / 1	4.5					
			/						
CP-1	HW CIRC PUMP	WATER SVC ROOM	120 / 1		FHP				1
MV-1	MIXING VALVE	WATER SVC ROOM	120 / 1	0.1					1
			/						
ERV-1	ENERGY RECOVERY VENT	DWELLING UNITS	120 / 1	0.163					2
			/						
EF-2	EXHAUST FAN	WATER SVC ROOM	120 / 1		1/15				3
			/						

GENERAL SCHEDULE NOTES: 4/6/2023

A. THE ELECTRICAL CONTRACTOR WILL PROVIDE AND CONNECT COMPLETE DISCONNECTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER CODE AND MANUFACTURERS' REQUIREMENTS. CONFIRM EXACT CONNECTION LOCATIONS AND REQUIREMENTS WITH EQUIPMENT PROVIDERS. COORDINATE FINAL LOCATION OF DISCONNECTS WITH ALL OTHER TRADES. DISCONNECT SHALL BE ACCESSIBLE AFTER ALL WORK IS COMPLETE. PROVIDE PERMANENT LABELS ON ALL DISCONNECTS IDENTIFYING EQUIPMENT AND PANEL-CIRCUIT SERVED. DISCONNECTS ACCESSIBLE TO THE GENERAL PUBLIC WILL BE LOCKABLE WITH TAMPER RESISTANT HARDWARE.

B. SEE ELECTRIC HEATER AND FAN SCHEDULE FOR EQUIPMENT TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

SPECIFIC SCHEDULE NOTES:

1. PROVIDE 120V CONNECTION TO EQUIPMENT AND ANY RELATED CONTROLLER AS REQUIRED BY MANUFACTURER AND MECH SYSTEM COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN
2. SPECIFIED UNIT PROVIDED WITH CORD & PLUG. CONTRACTOR TO PROVIDE RECEPTACLE FOR CONNECTION TO EQUIPMENT. VERIFY FINAL CONNECTION REQUIREMENT WITH MECHANICAL CONTACTOR PRIOR TO ROUGH-IN.
3. UNIT BEING PROVIDED BY OTHERS WITH LINE VOLTAGE THERMOSTAT. EC TO CONNECT COMPLETE.

HEATER EQUIPMENT SCHEDULES

ELECTRIC HEATER SCHEDULE

MARK	SERVES	MAKE	MODEL	KW	VOLT / PH	DIMENSIONS	NOTES
CH-0.42	DWELLING UNITS	KING	KCV COVE HEATER	0.42	240 / 1	4"H x 34"L	1, 4
CH-0.56	DWELLING UNITS	KING	KCV COVE HEATER	0.56	240 / 1	4"H x 47"L	1, 4
CH-0.7	DWELLING UNITS	KING	KCV COVE HEATER	0.7	240 / 1	4"H x 59"L	1, 4
CH-0.84	DWELLING UNITS	KING	KCV COVE HEATER	0.84	240 / 1	4"H x 71"L	1, 4
CH-0.93	DWELLING UNITS	KING	KCV COVE HEATER	0.935	240 / 1	4"H x 83"L	1, 4
CH-1.12	DWELLING UNITS	KING	KCV COVE HEATER	1.125	240 / 1	4"H x 94"L	1, 4
CH-1.4	DWELLING UNITS	KING	KCV COVE HEATER	1.4	240 / 1	4"H x 118"L	1, 4
CH-1.8	DWELLING UNITS	KING	KCV COVE HEATER	1.8	240 / 1	4"H x 118"L	1, 4
EH-1.1	FIRE SPRINKLER ROOM	KING	PAW WALL HEATER	1.50	240 / 1	7-9/16"H x 13-7/8"W x 5-3/16"D	1, 2, 3

NOTES:
1. CONFIRM EXACT LOCATION WITH ARCHITECT
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT.
3. UNIT SHALL BE FULLY-RECESSED. MAINTAIN FIRE RATING OF WALL INSTALLATION WHERE APPLICABLE.
4. SEE DWELLING UNIT ENLARGED PLANS FOR QUANTITIES.
5. UNIT WILL REQUIRE SURFACE MOUNTING.

ELECTRIC HEATER DWELLING UNIT SUMMARY - 8 UNIT STACKED FLATS

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES BED 1	BED 2	BED 3	LIVING
A	2-BDRM	CH-0.84	CH-0.7		CH-1.8
B	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
C	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
D	2-BDRM	CH-0.84	CH-0.7		CH-1.8
E	2-BDRM	CH-0.7	CH-0.56		CH-1.12
F	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
G	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
H	2-BDRM	CH-0.7	CH-0.56		CH-1.12

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.
B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 25

BID SET

VIRGINNA M. BROWN — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

REVISIONS / NOTES

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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMP / LUMENS COLOR TEMP CRI	BALLAST / DRIVER INFORMATION	TOTAL WATTS	VOLT	MOUNTING	RECESS DEPTH (IN)	MANUFACTURER	CATALOG NUMBER (SEE NOTES: 1, 2, 3)	NOTES:
F1	LED 4-FT LENSED STRIP WITH DROP LENS. CHAIN-HANG OR SURFACE/ WALL MOUNTED.	3000 LUMENS 4000K 80+	0-10V DIMMING (STANDARD)	30.0	120	VARIOUS		LITHONIA SIGNIFY LTG METALUX LTG	ZL1D-L48-3000LM-FST-MVOLT-40K-80CRI FSS SERIES SNLED SERIES	1, 2
										1, 2
U1	11-INCH DECORATIVE SURFACE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(2) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	22.0	120	CEILING		NUVO NO EXCEPTIONS	60-2621	1, 2
U2	LOW-PROFILE SURFACE-MOUNTED LED BOWL, OVAL SHAPE, 32-INCH LENGTH, WHITE/FROSTED ACRYLIC LENS. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	4000 LUMENS 3000K 80+	ELECTRONIC	50.0	120	CEILING		EFFICIENT LIGHTING	EL-855-50LEDAC	1, 2
U3	2-FT VANITY LUMINAIRE, LED SOURCE, WHITE ACRYLIC DIFFUSER. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	2200 LUMENS 3000K 80+	ELECTRONIC	23.0	120	WALL		LUMENCIA NO EXCEPTIONS	LLFL2103D-30K-SN	1, 2
U4	15-INCH DECORATIVE DOME. PROVIDE WITH LED GU-24 REPLACEMENT LAMPS. LAMPS MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	(3) SATCO S9707 A19/GU24 27K LED LAMPS	NONE	33.0	120	SUSPENDED		NUVO NO EXCEPTIONS	60-2623	1, 2
U5	LED 5-INCH SURFACE DOWNLIGHT. FIXTURE MUST HAVE EFFICACY OF AT LEAST 65 LUMENS PER WATT PER ENERGY CODE REQUIREMENTS.	700 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SURFACE		ACUITY SATCO COOPER LTG	JSF 5IN 07LM 30K 90CRI MVOLT ZT WH S21525 SMD4 SERIES	1, 2
W1	EXTERIOR WALL-MOUNTED DECORATIVE SCONCE. UL LISTED WET LOCATION. PROVIDE WITH LED SCREW-BASE REPLACEMENT LAMPS.	(1) SATCO S8914 A19/E26 27K LED LAMPS	NONE	8.5	120	WALL		NUVO NO EXCEPTIONS	60-533	1, 2
W2	SURFACE MOUNTED AREA LIGHT, FROSTED POLYCARBONARTE LENS, EXTERIOR RATED, BRONZE COLOR	1850 LUMENS 3000K 80+	ELECTRONIC	20.0	120	SURFACE / CEILING		FAILSAFE WILLIAMS LUMINAIRE	G12-BZ-LDE-20W-30-OPL-UNV-EDC1 WLSQO-L22/830-BZ-SF-DIM-UNV FFW1212 MIN10 20W 30K 120 OP BLK WL	1, 2, 3
W3	PENDANT MOUNTED CYLINDER DOWNLIGHT, 4-FOOT LONG RIGID STEM WITH STABILIZATION KIT, 30-DEGREE BEAM SPREAD, BRONZE COLOR, WET LABEL.	1000 LUMENS 3000K 80+	ELECTRONIC	10.0	120	SUSPENDED		ACUITY / GOTHAM INSIGHT	ICO4PC 30/10 AR LSS 30D MVOLT EZ10 JBX PCAN45 S6 WL DDBT WITH CYLSTBL KIT SPM-MO-30K-30-PND-UNV-DIM-TLB	1, 2, 3
W4	WALL MOUNTED ARCHITECURAL AREA LIGHT, WIDE THROW DISTRIBUTION, WET LABEL RATED MOUNT @ 8-FOOT AFF	1200 LUMENS 3000K 80+	ELECTRONIC	10.0	120	WALL		ACUITY WILLIAMS	WDGE1 LED P1 30K 80CRI VW MVOLT DDBXD VWM H - L10/630 - TL - DBR - SDGL - DIM - UNV	1, 2, 3
										1, 2, 3
X1	LED EMERGENCY LIGHTING UNIT WITH SEALED, MAINTENANCE-FREE LEAD ACID BATTERY AND LED HEADS.		ELECTRONIC	3.2	120	UNIVERSAL		ACUITY WILLIAMS	EU2C SD EMER/LED-WHT-SDT-D	

NOTES:

1. PROVIDE ALL PARTS, COMPONENTS, AND HARDWARE TO CONSTITUTE A COMPLETE INSTALLATION WITH OPTIONS INDICATED IN LUMINAIRE SCHEDULE. CATALOG NUMBERS FOR SUCH ITEMS ARE NOT INCLUDED IN SCHEDULE ABOVE.
2. COORDINATE ALL COLORS / FINISHES WITH ARCHITECT.
3. WHERE SWITCHING OF EMERGENCY LUMINAIRES IS INDICATED ON THE PLANS, PROVIDE UL 924 BYPASS DEVICES PER CODE REQUIREMENTS.
4. SEE LIGHTING PLANS FOR MOUNTING AND FACES / ARROWS AT EACH LOCATION.
5. SEE LIGHTING PLANS FOR MOUNTING.
6. CONFIRM ALL CEILING TYPES WITH ARCHITECT.

SEE SITE LIGHTING PLAN SHEET E110 FOR SCHEDULE
& SPECS FOR ALL 'S' LIGHTING FIXTURES.

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SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

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New Kirkland Heights LLLP
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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 25

BID SET

GEORGINNA M. TAYLOR
STATE OF WASHINGTON
43761
REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES
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LUMINAIRE SCHEDULE

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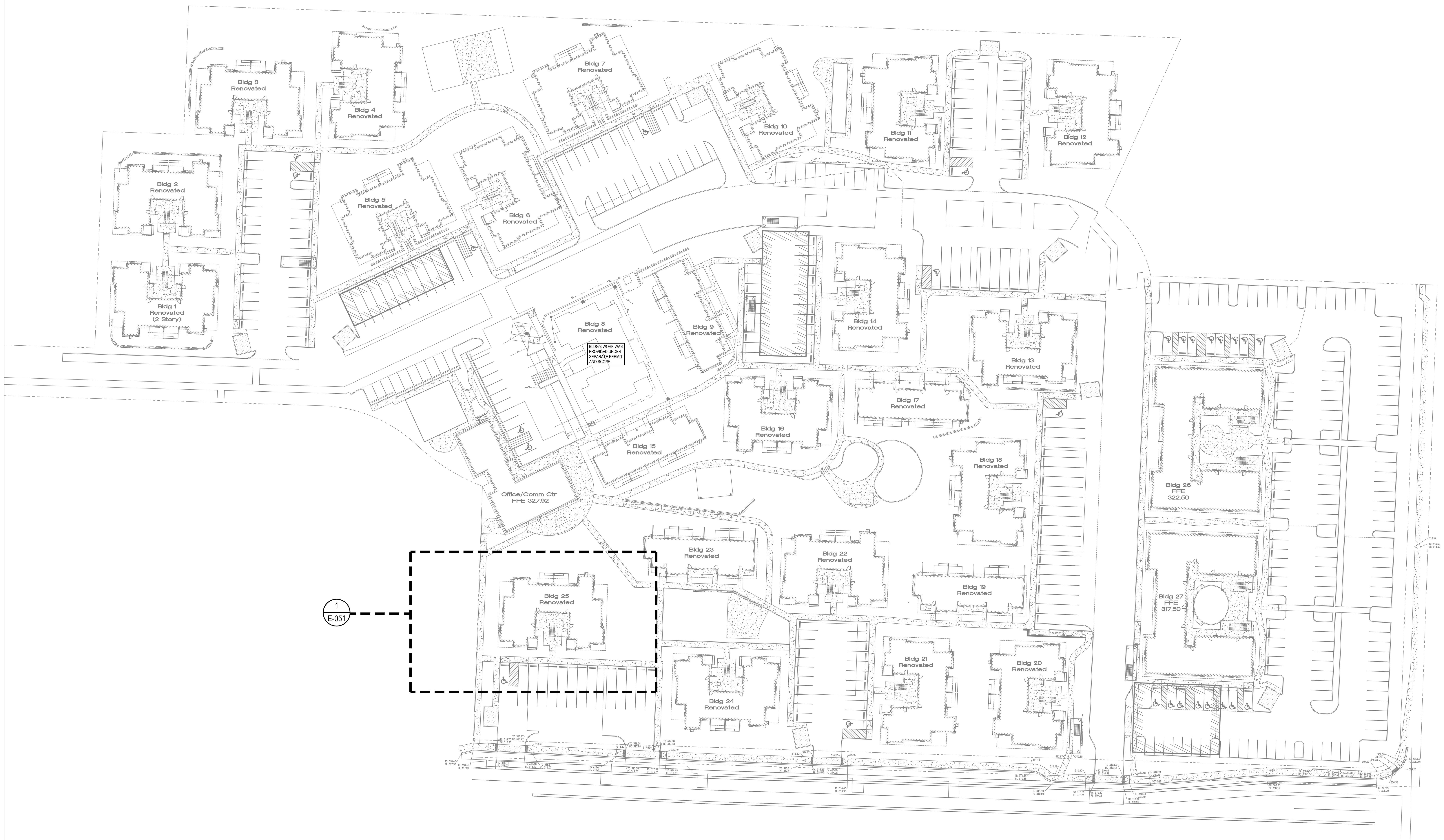
E25-005



OVERALL PROJECT SITE PLAN

SCALE: 1"=40'-0"

DRAWING PROVIDED FOR INFORMATIONAL PURPOSES ONLY ON EXISTING CONDITIONS. SEE INDIVIDUAL BUILDING SITE PLAN FOR SPECIFIC SCOPE.

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

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192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

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GEORGINNA M. [illegible] STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER
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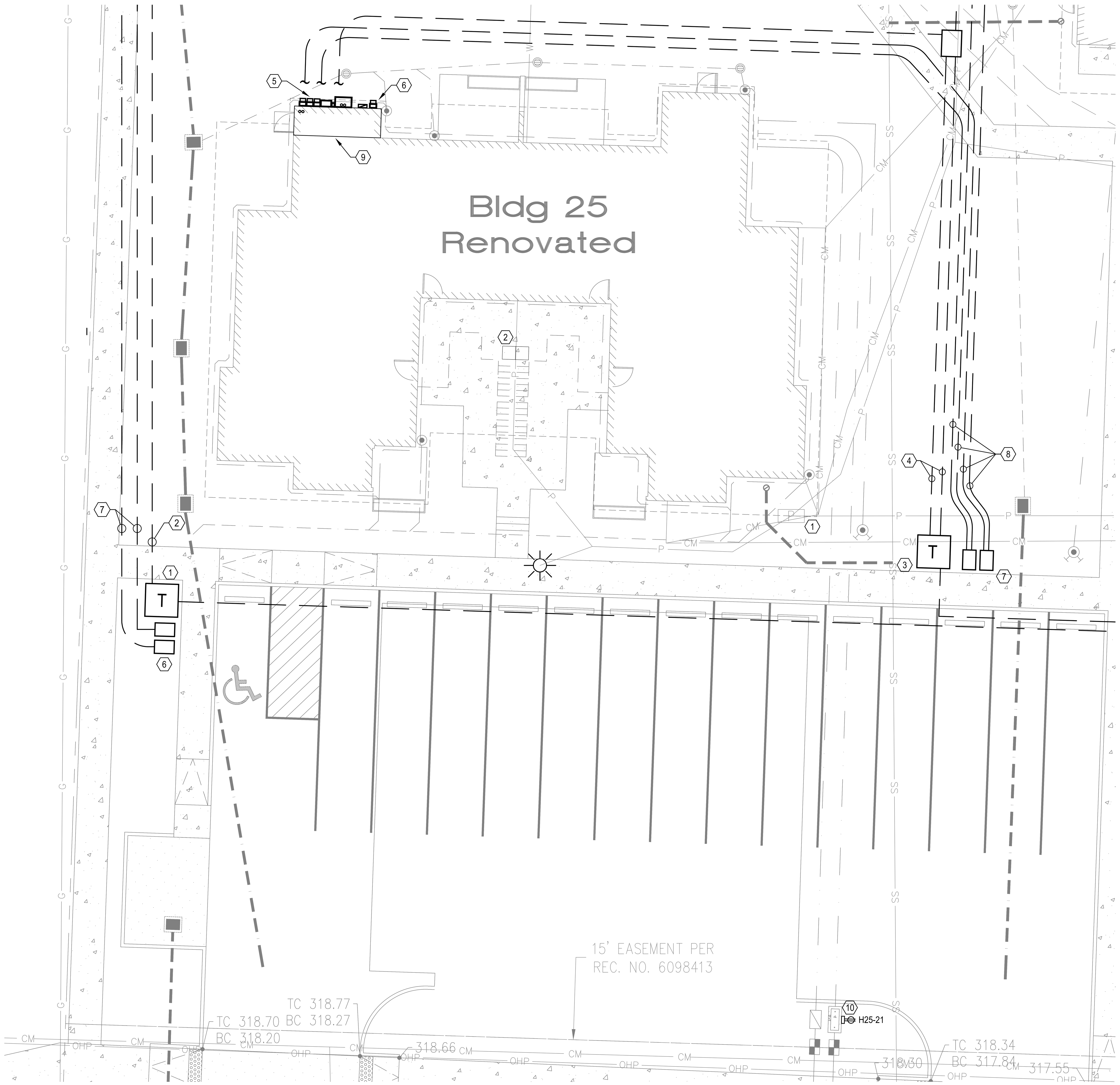

ALL INFORMATION SHOWN IN REGARDS TO THE EXISTING SYSTEMS AND INSTALLATION WAS TAKEN FROM AVAILABLE RESOURCES. THE CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMISSION OF BIDS AND FIELD VERIFY ACTUAL CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT AND SHALL INCLUDE ALL WORK REQUIRED TO FULFILL THE PROJECT SCOPE BASED ON THE ACTUAL EXISTING CONDITIONS IN THEIR BID. INFORM ARCHITECT AND ENGINEER OF CONFLICTS.

ELECTRICAL SITE PLAN - BUILDING 25

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

FLAG NOTES ⟨X⟩:

1. EXISTING BELOW-GRADE PUGET SOUND ENERGY (PSE) TRANSFORMER TO BE DEMOLISHED DUE TO CHANGE IN SITE. COORDINATE WITH PSE FOR DISCONNECT AND DEMO. GENERAL CONTRACTOR TO BACKFILL EXCAVATION ONCE VAULT IS REMOVED.
2. DEMOLISH EXISTING RESIDENTIAL METER CENTER.
3. NEW PSE PAD-MOUNTED TRANSFORMER. PSE TO PROVIDE AND INSTALL ALL PRIMARY CONDUIT/ CABLE, BELOW GRADE VAULT AND TRANSFORMER. ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH PSE IN ORDER TO DETERMINE AND PROVIDE ALL ADDITIONAL SERVICE CONNECTION REQUIREMENTS. GENERAL CONTRACTOR TO PROVIDE TRENCHING, FILL, AND CONCRETE ENCASEMENT AS REQUIRED PER PSE REQUIREMENTS.
4. NEW SECONDARY SERVICE FEEDERS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR FROM TRANSFORMER TO NEW SERVICE ENTRANCE EQUIPMENT. SEE SINGLE-LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITIES AND SIZES. INSTALL PER PSE AND CODE REQUIREMENTS.
5. NEW RESIDENTIAL METER CENTER TO SERVE APARTMENT UNITS. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
6. NEW HOUSE SERVICE METER AND MAIN DISCONNECT.
7. NEW 2' x 3' TELECOM HANDHOLE FOR NEW TELECOM SERVICES TO BUILDING.
8. PROVIDE AND INSTALL ONE (1) 4-INCH CONDUIT, PER TELECOM SERVICE PROVIDER, BETWEEN NEW HANDHOLES AND NEW TELECOM DEMARCATION.
9. NEW TELECOM BACKBOARD AND DEMARCATION, LOCATED INSIDE ELECTRICAL ROOM.
10. PROVIDE 120V DUPLEX RECEPTACLE FOR WATER LINE HEAT TRACE. COORDINATE WITH CIVIL TO VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS.

GENERAL NOTES:

A. CONTRACTOR(S) TO PROVIDE AND EXECUTE LOCATES AND VERIFY ALL EXISTING UTILITY CONDITIONS PRIOR TO SITE ALTERATIONS. COORDINATE ALL ROUTING OF NEW UTILITIES WITH CIVIL AS WELL AS THE IMPACTED UTILITIES.

B. ALL TRENCHING, BACKFILL, COVER AND RESTORATION NEEDED FOR THE ELECTRICAL SCOPE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR.

C. SEE SHEETS E110-E116 FOR SITE LIGHTING FIXTURE LOCATIONS AND ASSOCIATED BRANCH CIRCUITS BEING SERVED FROM THIS BUILDING.

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104
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FX: 206.623.5285

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Kirkland, WA 98034

BUILDING 25

BID SET

GEORGINNA M. L... STATE OF WASHINGTON 43761 REGISTERED PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

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ELECTRICAL SITE PLAN - BUILDING 1

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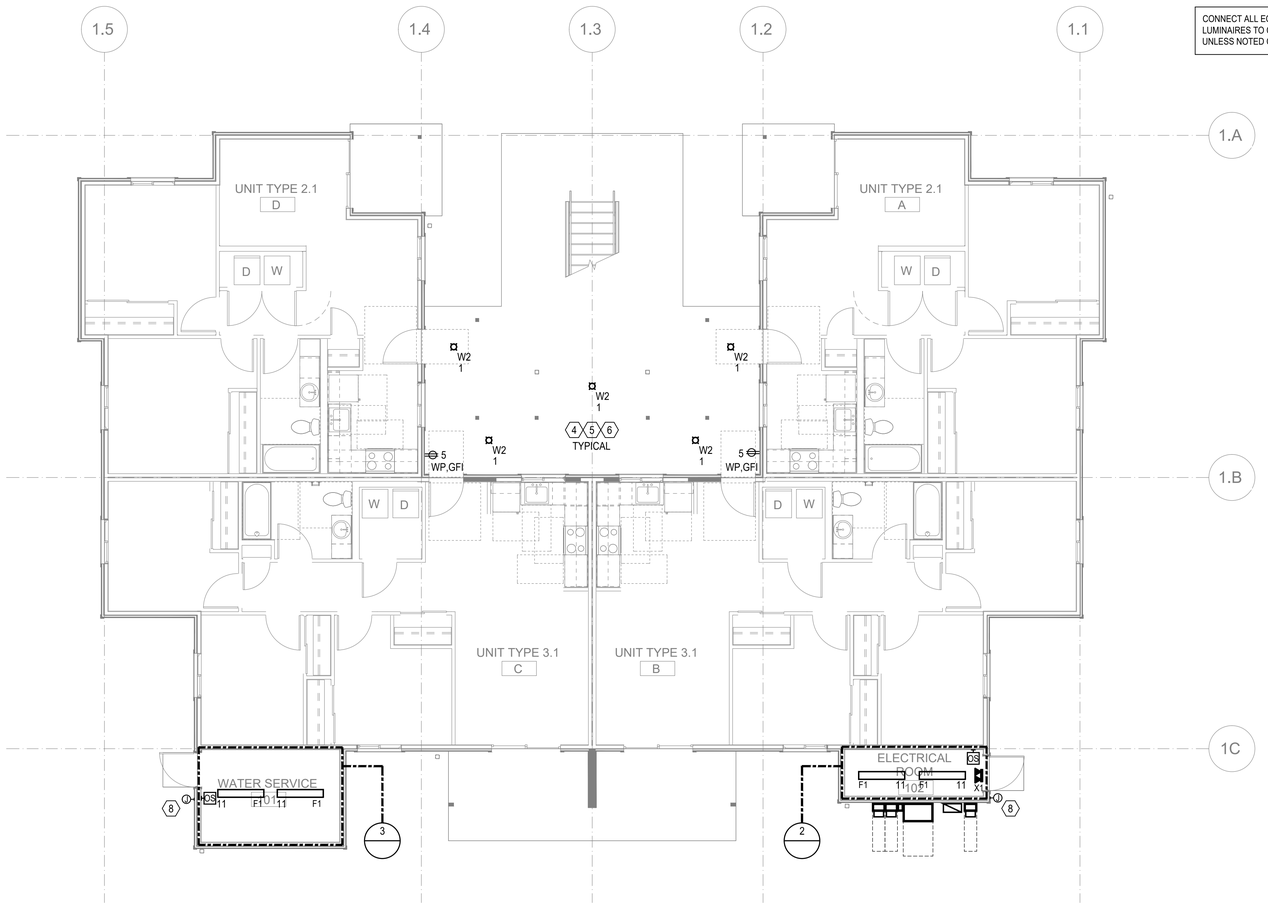


POWER AND LIGHTING PLAN - BUILDING 25 - LEVEL 1

SCALE: 3/16"=1'-0"

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H25 UNLESS NOTED OTHERWISE.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

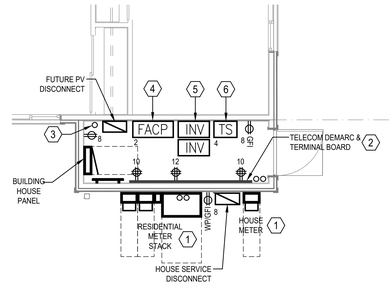
B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. PROVIDE NEW ELECTRICAL SERVICE EQUIPMENT FOR NEW APARTMENT UNIT CONFIGURATION AND THE BUILDING "HOUSE" LOADS. SEE ONE-LINE FOR SERVICE EQUIPMENT.
2. PROVIDE NEW TELECOM UTILITY SERVICE CONNECTIONS IN ELECTRICAL ROOM. PROVIDE RECEPTACLES AND GROUND BAR AT TELECOM DEMARC LOCATION. CONTRACTOR TO INSTALL FIRE RATED BACKBOARD MOUNTED TO WALLS INDICATED (CONFIRM WITH ARCHITECT). A/C GRADE SHEETS 4-FT X 8-FT X 3/4-INCH. TOP OF SHEETS TO BE 8'-6" AFF. ALL EDGES TO BE SMOOTH AND SPLINTER-FREE. PAINT TO MATCH FINISHED WALLS WITH FIRE RETARDANT PAINT.
   PROVIDE HOMERUNS FROM THE DEMARC LOCATION TO THE UNITS MEDIA CENTER, SEE ENLARGED UNIT PLANS FOR LOCATIONS.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. PROVIDE (1) 220 WATT EMERGENCY LIGHTING INVERTER, LOCATED IN ELECTRICAL ROOM, TO PROVIDE EMERGENCY POWER TO ALL BREEZEWAY AND STAIR LIGHTING FIXTURES TO MEET EGRESS LIGHTING REQUIREMENTS. BASIS OF DESIGN: SURE-LITES # INV-220-PB-S-SD
6. PROVIDE DIGITAL ASTRODIAL TIME CLOCK, IN ELECTRICAL ROOM, FOR AUTOMATIC CONTROL OF ALL BREEZEWAY LIGHTING. PROVIDE UL 924 DEVICES AS NEEDED TO OVERRIDE AUTOMATIC CONTROLS ON DURING UTILITY POWER LOSS. VERIFY TIME CLOCK PROGRAMING WITH OWNER.
7. LIGHTING FIXTURE TO BE SURFACE MOUNTED TO BOTTOM OF STAIR LANDING IN ORDER TO ILLUMINATE STAIR TREADS DOWN TO GRADE.
8. FIRE ALARM WIRING CONNECTION TO KNOX BOX. PROVIDE JUNCTION BOX AND FA WIRING TO LOCATIONS SHOWN. FIRE ALARM SUBCONTRACTOR TO PROVIDE CONNECTIONS AS REQUIRED. VERIFY EXACT LOCATION, DEVICE SPECS AND ADDITIONAL REQUIREMENTS WITH KIRKLAND FIRE DEPARTMENT PRIOR TO ROUGH-IN.
9. HEAT TRACE TO BE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR ON ALL EXPOSED WATER PIPE ENTERING AND EXITING EACH HEAT PUMP WATER HEATER. ELECTRICAL CONTRACTOR TO CONNECT COMPLETE PER CODE AND MANUFACTURERS INSTRUCTION. COORDINATE FINAL CONNECTION QUANTITIES, LOCATIONS AND REQUIREMENTS WITH PLUMBING CONTRACTOR.
10. ELECTRICAL CONTRACTOR TO PROVIDE POWER CONNECTION FOR EXHAUST FAN THERMOSTAT. CONFIRM CONNECTION REQUIREMENTS AND LOCATION WITH MECHANICAL CONTRACTOR.



2 / E101 ELECTRICAL ROOM

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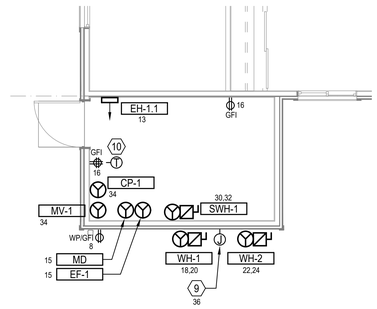

3 / E101 WATER ROOM

1/4"=1'-0"

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MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
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BUILDING 25

BID SET

REVISIONS / NOTES

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POWER AND LIGHTING PLAN - BUILDING 25 - LEVEL 1

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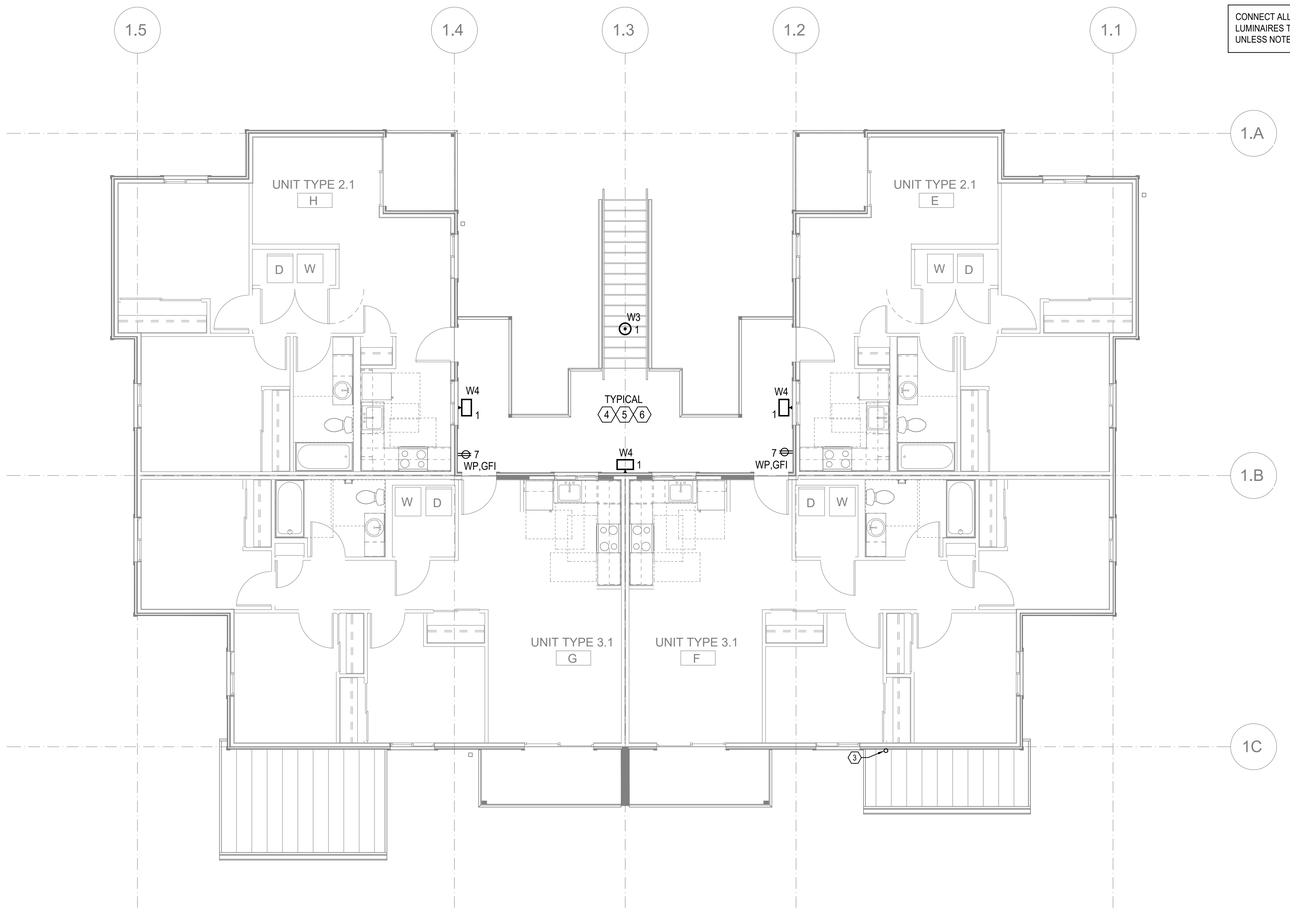


CONNECT ALL EQUIPMENT, DEVICES AND LUMINAIRES TO CIRCUITS NOTED ON PANEL H25 UNLESS NOTED OTHERWISE.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

SEE ENLARGED DWELLING UNIT PLANS FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS IN DWELLING UNITS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES (X):

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).
4. PROVIDE NEW FIRE ALARM SYSTEM AND CONTROL PANEL AS REQUIRED BY LOCAL FIRE MARHSAL AND AHJ. PROVIDE DEVICES THROUGH BUILDING CIRCULATION AREAS AS REQUIRED BY CODE.
5. ALL BREEZEWAY AND STAIR LIGHTING TO BE FED BY EMERGENCY LIGHTING INVERTER. SEE LEVEL 1 PLAN FOR LOCATION AND DETAILS.
6. ALL BREEZEWAY LIGHTING TO HAVE AUTOMATIC ON/OFF CONTROL VIA TIME CLOCK. SEE LEVEL 1 PLAN FOR LOCATION.

POWER AND LIGHTING PLAN - BUILDING 25 - LEVEL 2

SCALE: 3/16"=1'-0"

10/7/2021 7:33:34 AM

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
117 S. Main St., Suite 400
Seattle, WA 98104

PH: 206.623.1104
FX: 206.623.5285

King County Housing Authority

New Kirkland Heights LLLP
c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 25

BID SET

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER AND LIGHTING PLAN - BUILDING 25 - LEVEL 2

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E25-102

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

GENERAL NOTES:

A. PROVIDE TAMPER-PROOF RECEPTACLES IN ALL BUILDING AREAS ACCESSIBLE TO GENERAL PUBLIC AND IN RESIDENTIAL UNITS.

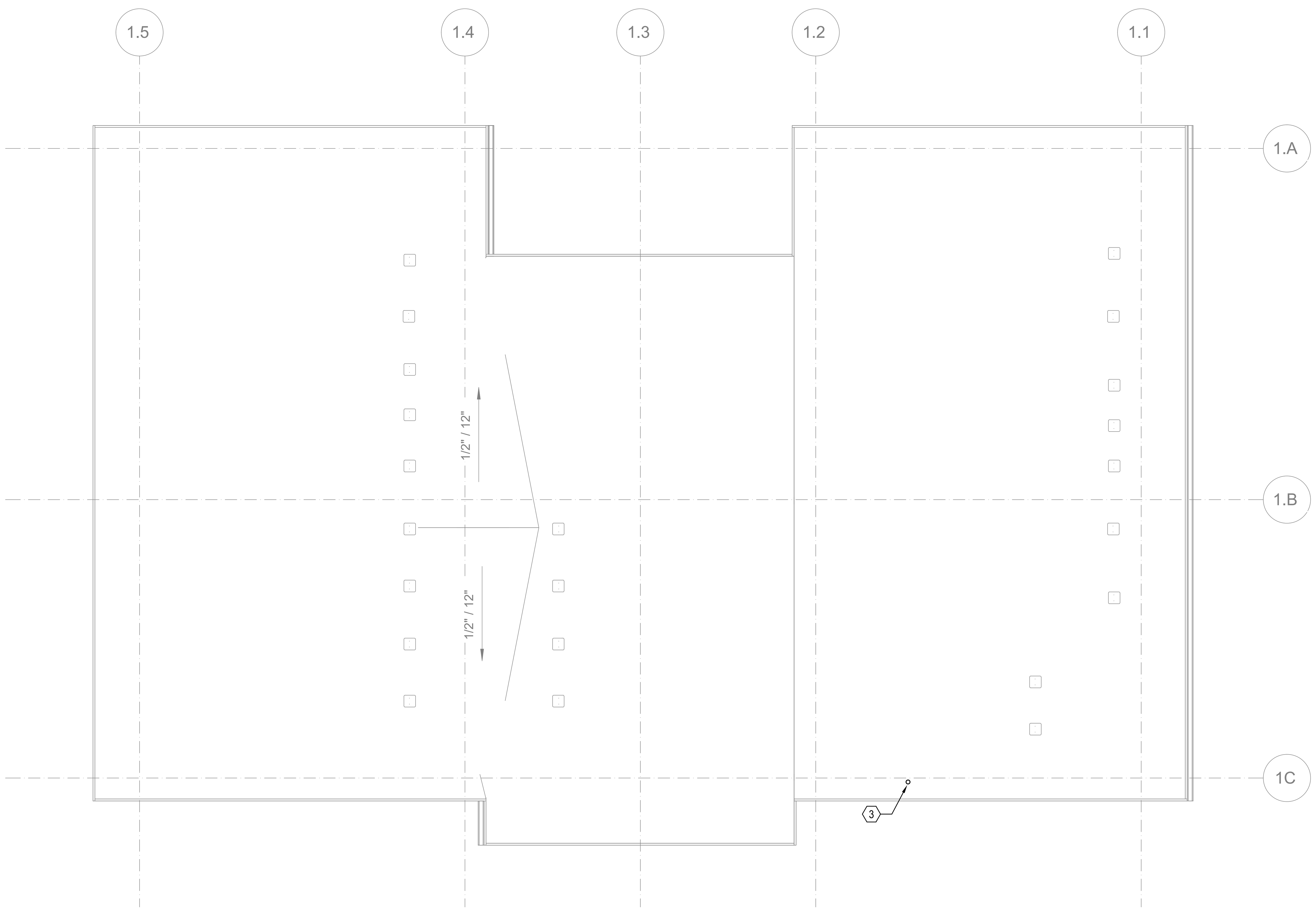
B. INSTALL GFCI PROTECTED RECEPTACLES WITHIN 25-FEET OF ALL MECHANICAL EQUIPMENT FOR MAINTENANCE. FIELD VERIFY EXACT LOCATIONS WITH MECHANICAL CONTRACTOR.

C. VERIFY ALL DEVICE AND SWITCH LOCATIONS WITH ARCHITECT, OWNER & TENANTS, PRIOR TO ROUGH-IN.

D. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

FLAG NOTES ⟨X⟩:

1. NOT USED.
2. NOT USED.
3. PROVIDE (1) 2-INCH CONDUIT FROM ELECTRICAL ROOM UP TO ROOF FOR CONNECTION TO FUTURE PV ARRAY. VERIFY CONDUIT ROUTING WITH ARCHITECT. (PV ARRAY TO BE PROVIDED BY OTHERS).



POWER PLAN - BUILDING 25 - ROOF

SCALE: 3/16"=1'-0"

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
Phone: 206.285.2966

SMR Architects
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c/o: King County Housing Authority, General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 25

BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

POWER PLAN - BUILDING 25 - ROOF

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E25-103

10/7/2021 7:33:34 AM

GENERAL NOTES:

A. SEE LOAD CENTER SCHEDULES ON SHEET E004 FOR CIRCUITING.

B. PROVIDE TAMPER-PROOF RECEPTACLES FOR ALL DEVICES IN RESIDENTIAL UNITS.

C. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

ALL LOW VOLTAGE SYSTEMS ARE DESIGN-BUILD. LOW VOLTAGE DEVICES SHOWN IN THIS SET ARE FOR COORDINATION AND SCOPE INTENT PURPOSES ONLY. SEE LOW VOLTAGE CONTRACTOR'S DRAWING SET FOR EQUIPMENT AND DEVICE QUANTITIES AND LOCATIONS.

FLAG NOTES (X):

1. COMBINATION SMOKE DETECTOR / CARBON MONOXIDE ALARM. FINAL LOCATION AS REQUIRED BY FIRE MARSHAL.
2. RECEPTACLE FOR REFRIGERATOR. FIELD VERIFY EXACT LOCATION. WHERE RECEPTACLE IS LOCATED WITHIN 6 FEET OF THE SINK, PROVIDE COMBINATION AFCI/ GFCI TYPE BREAKER ON CIRCUIT.
3. CONNECTION FOR RANGE. FIELD VERIFY EXACT LOCATION. CONFIRM FINAL CONNECTION REQUIREMENTS WITH EQUIPMENT PROVIDER.
4. CONNECTION FOR RANGE EXHAUST HOOD. FIELD VERIFY EXACT LOCATION. WHERE RECEPTACLE FOR HOOD IS LOCATED WITHIN 6 FEET OF THE SINK, PROVIDE COMBINATION AFCI/ GFCI TYPE BREAKER ON CIRCUIT.
5. CONNECTION FOR RANGE EXHAUST HOOD IN TYPE A UNITS. FIELD VERIFY EXACT LOCATION. PROVIDE ACCESSIBLE SWITCH FOR RANGE HOOD CONTROL. VERIFY EXACT LOCATION.
6. CENTER VANITY LIGHT WITH THE BATHROOM MIRROR. VERIFY LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
7. GANG SWITCHES UNDER ONE FACEPLATE.
8. NEW LOAD CENTER, IN EACH UNIT. ALL 20A, 1-POLE CIRCUIT BREAKERS SERVING KITCHENS, BEDROOMS, LIVING ROOMS, HALLWAYS, CLOSETS, ETC ARE TO BE EQUIPPED WITH AFCI-TYPE BREAKERS PER NEC 210.12.
9. PROVIDE MEDIA PANEL/ SMART BOX WITH INTEGRAL RECEPTACLE FOR PHONE, DATA AND CATV SERVICE FOR THE DWELLING UNIT. LOW VOLTAGE SUBCONTRACTOR TO PROVIDE AND INSTALL ALL REQUIRED CABLING CONNECTIONS BETWEEN SMART PANEL AND MDF IN ELECT ROOM. PROVIDE BOX LARGE ENOUGH TO ACCOMMODATE FUTURE ROUTER/ GATEWAY DEVICE. FIELD VERIFY EXACT LOCATION.
10. NEW TELE/COMM DEVICES IN UNIT TO SUPPORT TELEPHONE AND CABLE TV SERVICES. IN LIVING ROOM PROVIDE: (3) OUTLET PORTS CONSISTING OF (2) CAT5E & (1) COAX CABLE. IN MASTER BEDROOM PROVIDE: (2) OUTLET PORTS CONSISTING OF (1) CAT5E & (1) COAX CABLE. PROVIDE ALL NEW CABLING HOMERUN TO SMART PANEL LOCATED IN THE UNIT.
11. PROVIDE HORN/STROBES IN TYPE A UNITS PER CODE AND AHJ REQUIREMENTS. COORDINATE HORN/STROBE LOCATIONS WITH COVE HEATERS; DO NOT LOCATE HORN/STROBES ABOVE OR IMMEDIATELY ADJACENT TO COVE HEATERS. CONFIRM FINAL LOCATIONS WITH FIRE MARSHAL.
12. RECEPTACLE FOR ERV. FIELD VERIFY EXACT LOCATION WITH MECHANICAL CONTRACTOR.
13. PROVIDE DEDICATED CIRCUIT TO (1) RECEPTACLE NEXT TO AN OPERABLE WINDOW IN EACH UNIT FOR CONNECTION TO TENANT PROVIDED AC UNIT. VERIFY WITH OWNER WHICH RECEPTACLE IS DEDICATED PRIOR TO ROUGH-IN.
14. CONNECTION FOR WASHER AND DRYER. FIELD VERIFY CONNECTION LOCATIONS AND REQUIREMENTS WITH ARCHITECT. PROVIDE GFCI PROTECTION PER CODE REQUIREMENTS.

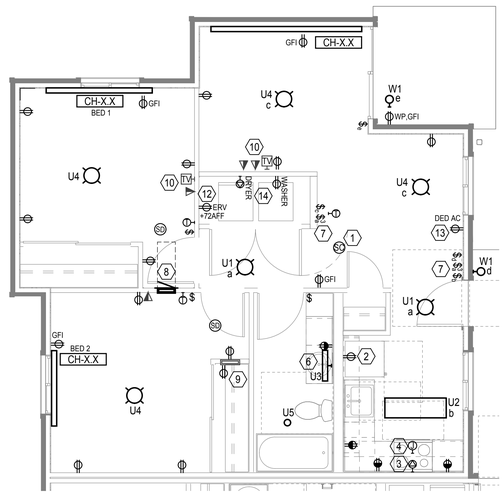
ELECTRIC HEATER DWELLING UNIT SUMMARY - 8 UNIT STACKED FLATS

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES			
		BED 1	BED 2	BED 3	LIVING
A	2-BDRM	CH-0.84	CH-0.7		CH-1.8
B	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
C	3-BDRM	CH-0.84	CH-0.7	CH-0.42	CH-1.4
D	2-BDRM	CH-0.84	CH-0.7		CH-1.8
E	2-BDRM	CH-0.7	CH-0.56		CH-1.12
F	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
G	3-BDRM	CH-0.56	CH-0.56	CH-0.42	CH-0.93
H	2-BDRM	CH-0.7	CH-0.56		CH-1.12

NOTES:

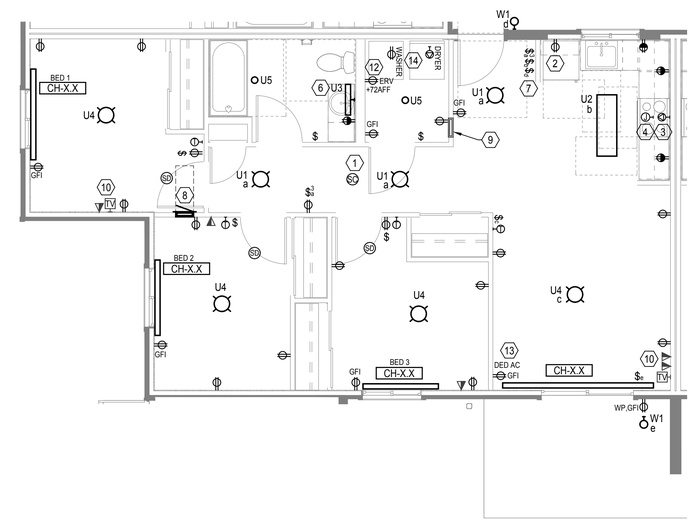
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.

B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.



3 **ENLARGED PLAN - 2-BED**

1/4"=1'-0" UNITS: A, D, E, H



1 **ENLARGED PLAN - 3-BED**

1/4"=1'-0" UNITS: B, C, F, G

SIDER+BYERS
MECHANICAL + ELECTRICAL ENGINEERS
192 Nickerson, Suite #300
Seattle, Washington 98109
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SMR Architects
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King County Housing Authority

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c/o: King County Housing Authority,
General Partner
13310 NE 133rd St.
Kirkland, WA 98034.
CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS

13317 NE 133rd St.,
Kirkland, WA 98034

BUILDING 1

BID SET

JEONGINNA M. AHN — STATE OF WASHINGTON — 43761 — REGISTERED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

REVISIONS / NOTES

NO	DATE	DESCRIPTION

DPD STAMP

TITLE

ENLARGED UNIT PLANS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
JOB NO.	22016
SHEET NO.:	

E1-301

10/7/2021 7:33:34 AM

GENERAL NOTES:

A. SEE LOAD CENTER SCHEDULES ON SHEET E004 FOR CIRCUITING.

B. PROVIDE TAMPER-PROOF RECEPTACLES FOR ALL DEVICES IN RESIDENTIAL UNITS.

C. CONTRACTOR MUST ALERT ENGINEER AND ARCHITECT WHEN ROUGH-IN FOR ELECTRICAL AND LOW-VOLTAGE SYSTEMS IS COMPLETE AND PROVIDE THE DESIGN TEAM WITH OPPORTUNITY TO REVIEW THE INSTALLATION PRIOR TO COVER. IF NOTICE IS NOT PROVIDED, IT WILL BE AT THE EXPENSE OF THE CONTRACTOR TO RE-OPEN CEILINGS AND WALLS FOR INSPECTION BY DESIGN TEAM.

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FLAG NOTES (X):

1. COMBINATION SMOKE DETECTOR / CARBON MONOXIDE ALARM. FINAL LOCATION AS REQUIRED BY FIRE MARSHAL.
2. RECEPTACLE FOR REFRIGERATOR. FIELD VERIFY EXACT LOCATION. WHERE RECEPTACLE IS LOCATED WITHIN 6 FEET OF THE SINK, PROVIDE COMBINATION AFCI/ GFCI TYPE BREAKER ON CIRCUIT.
3. CONNECTION FOR RANGE. FIELD VERIFY EXACT LOCATION. CONFIRM FINAL CONNECTION REQUIREMENTS WITH EQUIPMENT PROVIDER.
4. CONNECTION FOR RANGE EXHAUST HOOD. FIELD VERIFY EXACT LOCATION. WHERE RECEPTACLE FOR HOOD IS LOCATED WITHIN 6 FEET OF THE SINK, PROVIDE COMBINATION AFCI/ GFCI TYPE BREAKER ON CIRCUIT.
5. CONNECTION FOR RANGE EXHAUST HOOD IN TYPE A UNITS. FIELD VERIFY EXACT LOCATION. PROVIDE ACCESSIBLE SWITCH FOR RANGE HOOD CONTROL. VERIFY EXACT LOCATION.
6. CENTER VANITY LIGHT WITH THE BATHROOM MIRROR. VERIFY LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
7. GANG SWITCHES UNDER ONE FACEPLATE.
8. NEW LOAD CENTER, IN EACH UNIT. ALL 20A, 1-POLE CIRCUIT BREAKERS SERVING KITCHENS, BEDROOMS, LIVING ROOMS, HALLWAYS, CLOSETS, ETC ARE TO BE EQUIPPED WITH AFCI-TYPE BREAKERS PER NEC 210.12.
9. PROVIDE MEDIA PANEL/ SMART BOX WITH INTEGRAL RECEPTACLE FOR PHONE, DATA AND CATV SERVICE FOR THE DWELLING UNIT. LOW VOLTAGE SUBCONTRACTOR TO PROVIDE AND INSTALL ALL REQUIRED CABLING CONNECTIONS BETWEEN SMART PANEL AND MDF IN ELECT ROOM. PROVIDE BOX LARGE ENOUGH TO ACCOMMODATE FUTURE ROUTER/ GATEWAY DEVICE. FIELD VERIFY EXACT LOCATION.
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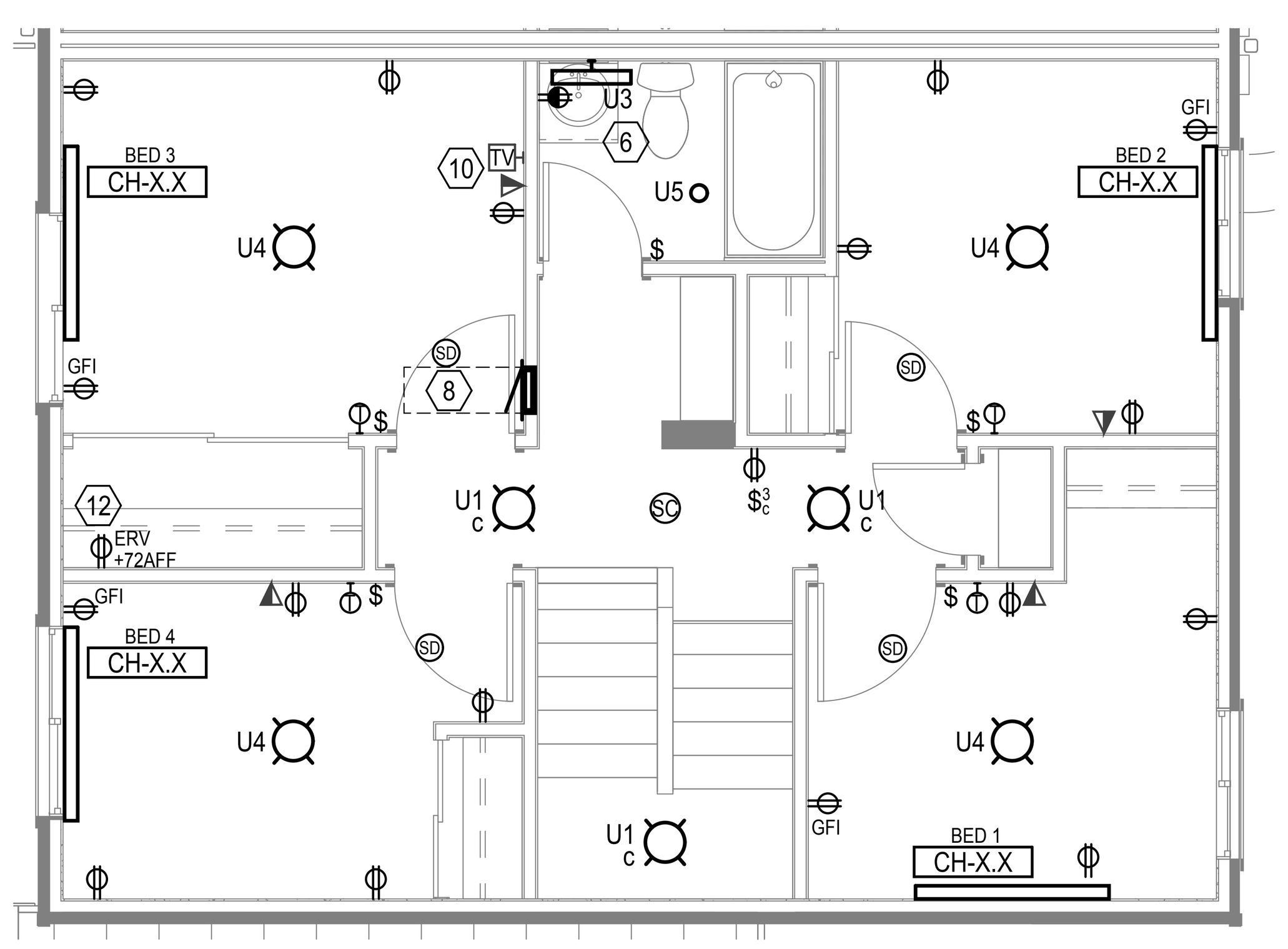
11. PROVIDE HORN/STROBES IN TYPE A UNITS PER CODE AND AHJ REQUIREMENTS. COORDINATE HORN/STROBE LOCATIONS WITH COVE HEATERS; DO NOT LOCATE HORN/STROBES ABOVE OR IMMEDIATELY ADJACENT TO COVE HEATERS. CONFIRM FINAL LOCATIONS WITH FIRE MARSHAL.
12. RECEPTACLE FOR ERV. FIELD VERIFY EXACT LOCATION WITH MECHANICAL CONTRACTOR.
13. PROVIDE DEDICATED CIRCUIT TO (1) RECEPTACLE NEXT TO AN OPERABLE WINDOW IN EACH UNIT FOR CONNECTION TO TENANT PROVIDED AC UNIT. VERIFY WITH OWNER WHICH RECEPTACLE IS DEDICATED PRIOR TO ROUGH-IN.
14. CONNECTION FOR DISHWASHER. FIELD VERIFY CONNECTION TYPE, LOCATION AND REQUIREMENTS WITH ARCHITECT. PROVIDE GFCI PROTECTION PER CODE REQUIREMENTS. LOCATION OF CONNECTION TO BE ACCESSIBLE.
15. CONNECTION FOR WASHER AND DRYER. FIELD VERIFY CONNECTION LOCATIONS AND REQUIREMENTS WITH ARCHITECT. PROVIDE GFCI PROTECTION PER CODE REQUIREMENTS.
16. COORDINATE BATHROOM HEATER LOCATION WITH OWNER AND ARCHITECT.

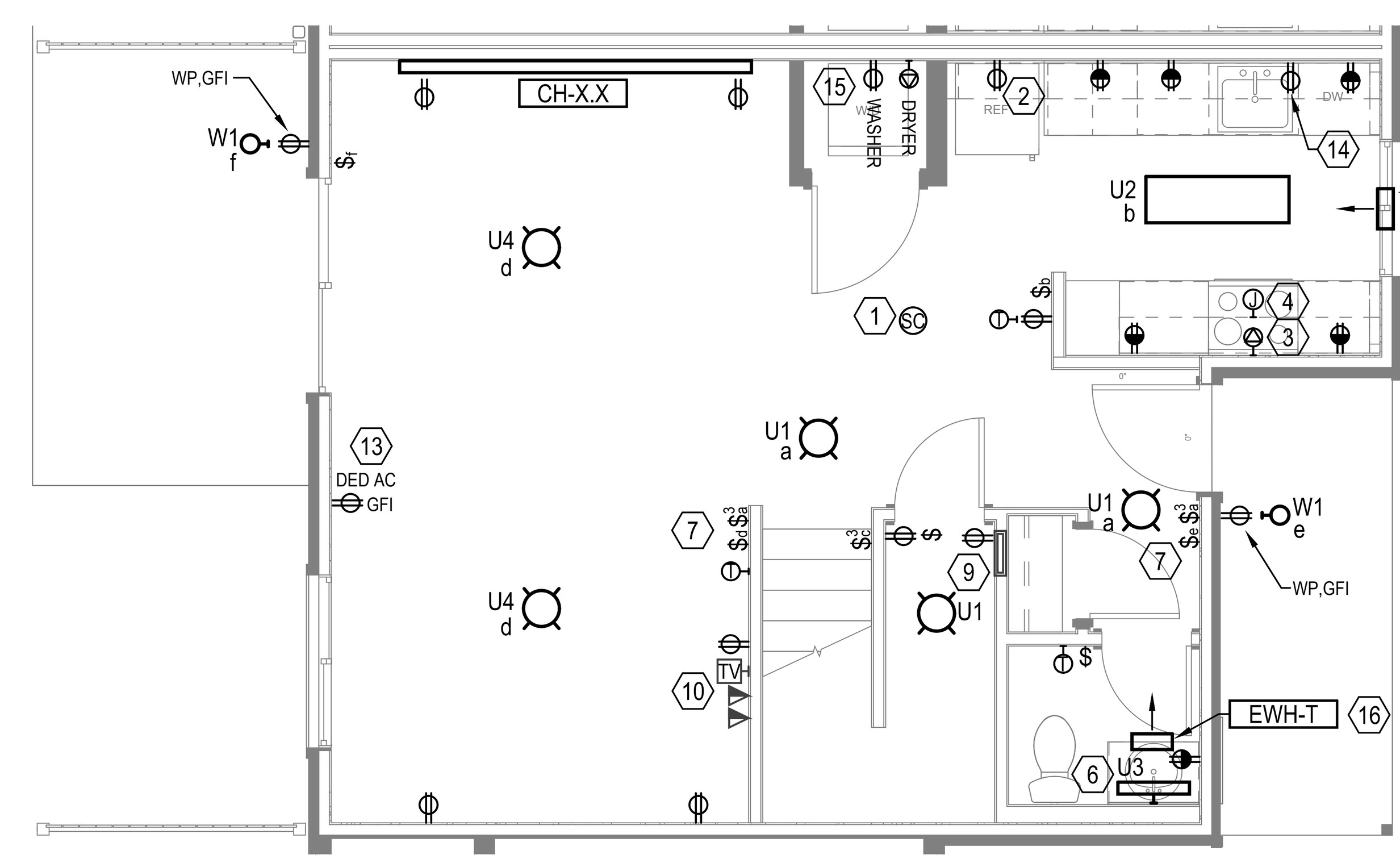
ELECTRIC HEATER DWELLING UNIT SUMMARY - 4 UNIT TOWNHOMES

UNIT NUMBER(S)	UNIT TYPE	HEATER TYPES BED 1	BED 2	BED 3	BED 4	KITCHEN	BATH	LIVING
A	4-BDRM	CH-0.93	CH-0.56	CH-0.56	CH-0.93	EWH-T	EWH-T	CH-1.4
B	4-BDRM	CH-0.7	CH-0.7	CH-0.7	CH-0.7	EWH-T	EWH-T	CH-1.12
C	4-BDRM	CH-0.7	CH-0.7	CH-0.7	CH-0.7	EWH-T	EWH-T	CH-1.12
D	4-BDRM	CH-0.93	CH-0.56	CH-0.56	CH-0.93	EWH-T	EWH-T	CH-1.4

NOTES:
A. SEE ELECTRIC HEATER SCHEDULE FOR HEATER INFORMATION.
B. HEATERS SIZED PER HEAT LOSS CALCULATIONS PROVIDED BY OTHERS.



3 **ENLARGED PLAN - TH - LEVEL 2**
1/4"=1'-0"



1 **ENLARGED PLAN - TH - LEVEL 1**
1/4"=1'-0"

10/7/2021 7:33:34 AM

SIDER + BYERS
MECHANICAL + ELECTRICAL ENGINEERS
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King County Housing Authority

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CONTRACT #: TC2300131

KIRKLAND HEIGHTS APARTMENTS
13317 NE 133rd St., Kirkland, WA 98034

BUILDING 9
BID SET

NOT FOR CONSTRUCTION

REVISIONS / NOTES
NO DATE DESCRIPTION

DPD STAMP

TITLE
ENLARGED UNIT PLANS

PERMIT #	
DRAWN	RA, JF
CHECKED	GL
ISSUE DATE	4/14/2023
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SHEET NO.:	

E9-301