

ELECTRICAL LEGEND

NOTES (APPLICABLE TO ALL ELECTRICAL DRAWINGS):

- ALL SYSTEMS, EQUIPMENT, DEVICES, RACEWAYS, CABLES, ETC. INDICATED ARE NEW UNLESS NOTED OTHERWISE.
- RACEWAYS AND CABLES THROUGHOUT THE FACILITY SHALL BE RUN CONCEALED IN THE WALLS, ABOVE THE CEILING OR BELOW THE FLOOR WHERE POSSIBLE, EXCEPT, EXPOSED WITHIN UTILITY & OTHER NON-PUBLIC SPACES. WITHIN PUBLIC SPACES, WHERE DUE TO THE BUILDINGS CONSTRUCTION, IT IS NOT POSSIBLE TO ROUTE RACEWAYS & CABLES CONCEALED, RACEWAYS MAY BE RUN EXPOSED. (EXPOSED CABLES ARE NOT ALLOWED EXCEPT IN TELECOMMUNICATIONS ROOMS.) EXPOSED RACEWAYS SHALL BE RUN AS NEATLY & UNOBTRUSIVELY AS POSSIBLE, SUPPORTED AS REQUIRED, PARALLEL OR AT RIGHT ANGLES TO CEILINGS, WALLS & STRUCTURAL MEMBERS.
- RACEWAYS SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:
 - INTERIOR ACCESSIBLE CONCEALED SPACES - ELECTRICAL METALLIC TUBING (EMT) WITH FLEXIBLE METAL CONDUIT (FLEX) FOR FINAL CONNECTIONS TO VIBRATING EQUIPMENT.
 - INTERIOR, EXPOSED IN UTILITY ROOMS & OTHER NON-PUBLIC SPACES - ELECTRICAL METALLIC TUBING (EMT).
 - EXTERIOR ABOVE GRADE - GALVANIZED RIGID STEEL CONDUIT (GRS).
 - EXTERIOR BELOW GRADE - SCHEDULE 40 POLYVINYL CHLORIDE CONDUIT (PVC), EXCEPT CONDUIT BENDS & RISERS SHALL BE GALVANIZED RIGID STEEL (GRS).
- RACEWAYS SHALL BE SIZED SO THAT THE CABLE FILL DOES NOT EXCEED 40%, EXCEPT, MINIMUM CONDUIT (& EQUIVALENT SURFACE METAL RACEWAY) SIZES SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:
 - 3/4" - BRANCH CIRCUITS, EXCEPT AS NOTED ELSEWHERE.
 - 1" - TELECOMMUNICATIONS RACEWAYS TERMINATING IN A SINGLE DEVICE.
 - 1 1/4" - TELECOMMUNICATIONS RACEWAYS SERVING MULTIPLE DEVICES.
- FLEX MAY BE SUBSTITUTED FOR EMT WHEN RUN CONCEALED WITHIN WALLS & CEILINGS. FLEX SHALL NOT BE USED FOR HOME RUNS.
- TELECOMMUNICATIONS CONDUITS SHALL BE PROVIDED WITH PULL STRINGS. EXISTING CONDUITS TO BE USED SHALL BE FISHED AND CLEANED PRIOR TO INSTALLATION OF CABLES.
- BELOW GRADE SERVICE & FEEDER CABLE SHALL BE 1/2 COPPER (UNLESS SPECIFICALLY NOTED OTHERWISE) WITH 600V TYPE USE/RHH/RHW OR XHHW INSULATION.
- BRANCH CIRCUIT CABLES, EQUIPMENT GROUND CABLES AND ABOVE GRADE FEEDER CABLES SHALL BE 1/2 COPPER #12 AWG UNLESS NOTED OTHERWISE, WITH 600V TYPE XHHW OR THHN/THWN INSULATION.
- IN ADDITION TO THE CIRCUIT CONDUCTORS INDICATED, CONTRACTOR SHALL PROVIDE AN EQUIPMENT GROUND CABLE (SIZED THE SAME AS THE LARGEST CIRCUIT CONDUCTOR UNLESS SPECIFICALLY NOTED OTHERWISE) WITHIN EACH RACEWAY WITH THE CIRCUIT CONDUCTORS.
- ALL WIRING SHALL BE ENCLOSED WITHIN THE RACEWAY SYSTEM, EXCEPT, TELECOMMUNICATIONS, FIRE ALARM AND CLASS 2 LOW VOLTAGE CABLING MAY BE BUNDLED TOGETHER AND SUPPORTED OPEN IN ACCESSIBLE CEILING SPACES.
- FLOOR, WALL AND CEILING PENETRATIONS BY OPEN CABLES WILL NOT BE ALLOWED. PROVIDE CONDUIT SLEEVES WHERE OPEN CABLES PASS THROUGH WALLS, DRAFTSTOPS, CEILINGS, FLOORS, ETC.
- PROTECT "OPEN" CABLE WIRING FROM ROUGH AND/OR SHARP EDGES ON SUPPORTS, STRUCTURAL MEMBERS, ETC. AS REQUIRED DURING INSTALLATION.
- VERIFY ALL EQUIPMENT, DEVICE, ETC. LOCATIONS WITH THE OWNER & ENGINEER PRIOR TO ROUGH-IN. THE OWNER RESERVES THE RIGHT TO RELOCATE OUTLETS, ETC. WITHIN 10' OF THE LOCATION INDICATED, WITHOUT INCREASE IN COST.
- VERIFY ALL EQUIPMENT, DEVICE, ETC. LOCATIONS WITH THE ARCHITECT PRIOR TO ROUGH-IN. SEE MECHANICAL DRAWINGS FOR LOCATION OF MECHANICAL EQUIPMENT, ARCHITECTURAL DRAWINGS FOR SPECIALTY EQUIPMENT, CASEWORK, ETC. THE OWNER RESERVES THE RIGHT TO RELOCATE OUTLETS, ETC. WITHIN 10' OF THE LOCATION INDICATED, WITHOUT INCREASE IN COST.
- CONTRACTOR SHALL VERIFY WITH THE ARCHITECT THE FIRE RESISTIVE RATINGS FOR WALLS, PARTITIONS AND OTHER BUILDING STRUCTURES. INSTALLATION OF NEW SYSTEM COMPONENTS MUST MAINTAIN THE EXISTING FIRE RESISTIVE RATING OF THE BUILDING.

DEMOLITION NOTES:

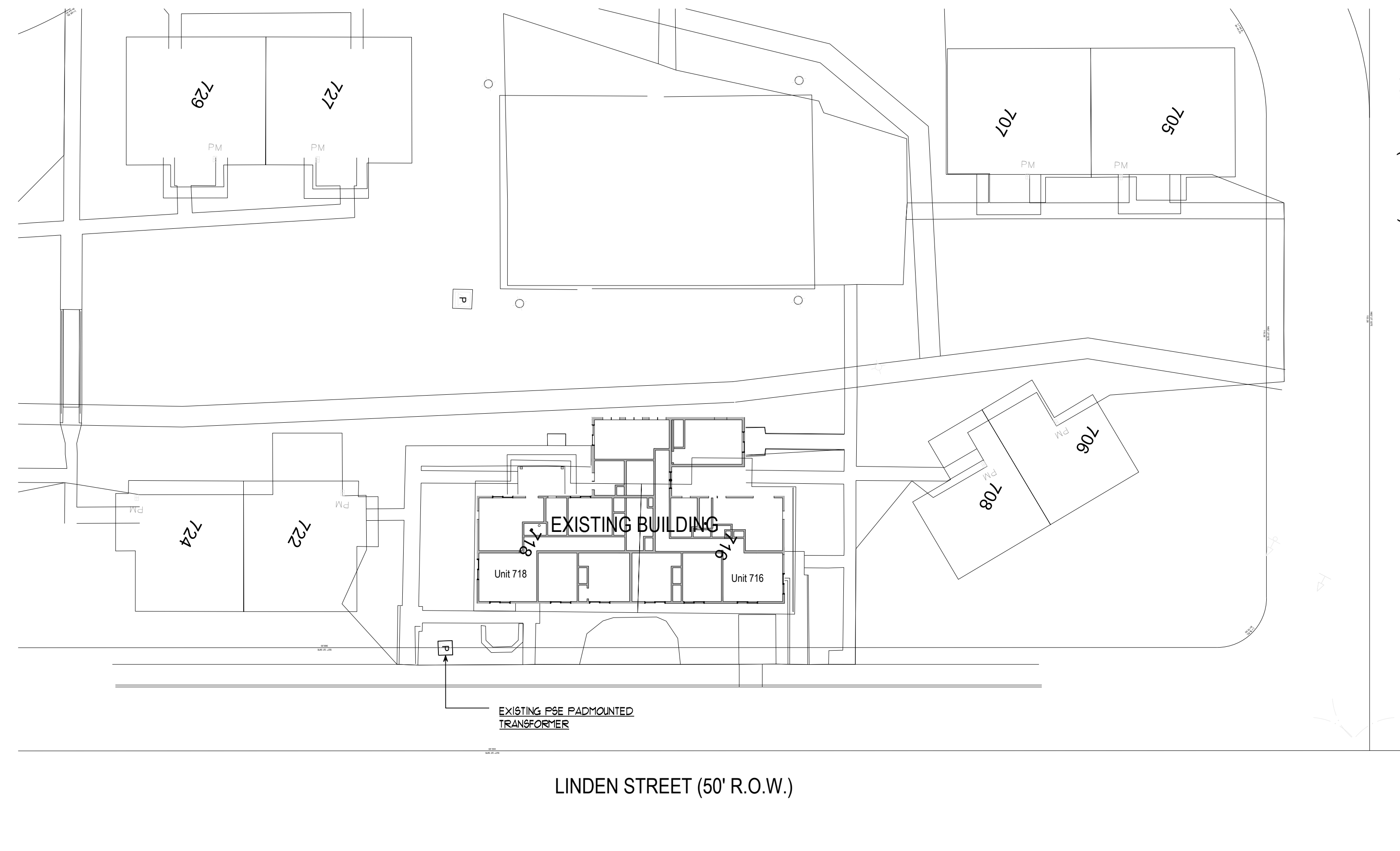
- CONTRACTOR SHALL REMOVE EXISTING EQUIPMENT, FIXTURES, DEVICES, ETC. AS INDICATED IN THE WORK AREA AND ALL ASSOCIATED CONDUIT, BOXES, CABLES, ETC. SHALL BE REMOVED TO THEIR POINT OF ORIGIN &/OR DESTINATION, EXCEPT:
 - CONCEALED CONDUITS MAY BE ABANDONED IN PLACE. CABLES HOWEVER SHALL BE REMOVED WITH A PULL ROPE ADDED AND THE CONDUIT SHALL BE CAPPED AND LABELED (WHERE IT GOES) ON EACH END.
- EXISTING FEEDERS, CIRCUITS, CONDUITS, CABLES, ETC. INTERRUPTED DUE TO THE SYSTEM UPGRADE SHALL BE RE-CONNECTED AS REQUIRED TO MAINTAIN THE ORIGINAL FUNCTION.
- ALL SURPLUS MATERIAL REMOVED DURING THE DEMOLITION SHALL BE INSPECTED BY THE OWNER, AND THOSE ITEMS SELECTED SHALL REMAIN THE PROPERTY OF THE OWNER. ALL REMAINING SURPLUS MATERIALS SHALL BE REMOVED FROM THE SITE & DISPOSED OF BY THE CONTRACTOR ACCORDING TO ALL APPLICABLE REGULATIONS.

- LIGHTING**
- LUMINAIRE, SURFACE MTD.
 - STRIP LIGHT
 - LUMINAIRE, SURFACE MTD.
 - LUMINAIRE, WALL MOUNTED
 - EXIT LIGHT
- SWITCHES**
- S SINGLE-POLE SWITCH
 - S₃ THREE-WAY SWITCH
 - S_H MOTOR RATED SWITCH
 - ⊖ THERMOSTAT
 - ⊙ MOTION SENSOR, CEILING MTD.

- OUTLETS**
- ⊖ DUPLEX OUTLET
 - ⊖_{TR} DUPLEX OUTLET, TAMPER RESISTANT
 - ⊖_{GF} DUPLEX OUTLET, GROUND FAULT INTERRUPTING
 - ⊖_{WP} DUPLEX OUTLET, WEATHERPROOF
 - ⊖_{REF} REFRIGERATOR OUTLET
 - ⊖_W WASHER OUTLET
 - ⊖ SPECIAL PURPOSE OUTLET
 - ⊖ SPECIAL PURPOSE CONNECTION (VERIFY HEIGHT WITH CABINETS)
 - ⊖_{WH} HOT WATER HEATER CONNECTION
 - ⊖_D DRYER OUTLET
 - ⊖_R RANGE OUTLET
 - ⊖_{DW} DISHWASHER CONNECTION
 - ⊖_H RANGE HOOD CONNECTION (FUTURE MICROWAVE/HOOD COMBINATION)

- MISCELLANEOUS**
- BRANCH CIRCUIT, ABOVE GRADE, CONCEALED (SLASHES + NO. OF CIRCUIT CONDUCTORS)
 - BELOW GRADE CONDUIT
 - CABLE RUN 'OPEN' EXCEPT CONCEALED BY ACCESSIBLE OR NON-ACCESSIBLE BUILDING MATERIALS
 - CONCRETE ENCASED CONDUIT
 - HOME RUN TO LOCATION INDICATED, CONCEALED (TYPICAL)
 - HOME RUN TO LOCATION INDICATED, EXPOSED (TYPICAL)
 - GROUND CABLE, EXPOSED
 - CONDUIT STUB UP TO ACCESSIBLE CEILING SPACE
 - JUNCTION BOX
 - EXISTING TO BE REMOVED
 - EXISTING DEVICE TO REMAIN (TYPICAL)
 - EXISTING DEVICE TO BE RELOCATED (REMOVED, PROTECTED, STORED DURING CONSTRUCTION & REINSTALLED AT NEW LOCATION)
 - EXISTING DEVICE TO BE REPLACED WITH NEW

- EXHAUST FAN**
- EXHAUST FAN
 - SURFACE MOUNTED PANEL
 - FLUSH MOUNTED PANEL
 - FLUSH MOUNTED ELECTRIC HEATER (SEE DRAWING NOTES FOR WATTAGE)
 - SURFACED MOUNTED ELECTRIC HEATER (SEE DRAWING NOTES FOR WATTAGE)
- ANCILLARIES**
- ⊖_{20V} SMOKE / CARBON MONOXIDE DETECTOR, 120V
 - ⊖_{20V} FIRE ALARM SMOKE DETECTOR, 120V
 - ⊖ TELEPHONE OUTLET
 - ⊖ CATV OUTLET



Electrical - Site Plan

Scale: 1" = 20'-0"



LOW VOLTAGE CABLE CODES					
CODE	FUNCTION	DESCRIPTION	COLOR	NEC TYPE	CABLE ROUTING
CT	TELEVISION SYSTEM HORIZONTAL CABLE	RG6 COAXIAL CABLE, QUAD SHIELD	BLACK JACKET	CATVR	OPEN OR COMBINATION OPEN & RACEWAY
CM	VOICE/DATA SYSTEM HORIZONTAL CABLE	CAT5e UNSHIELDED TWISTED PAIRS (UTP)	BLUE JACKET	CMR	OPEN OR COMBINATION OPEN & RACEWAY

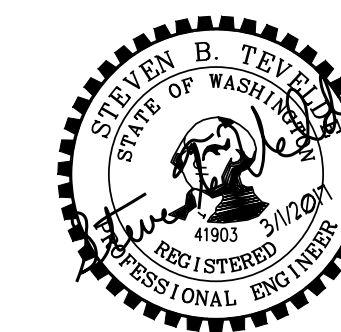
Everett Housing Authority
Grandview Community Building Remodel
 716/718 Linden Street, Everett, WA 98201

Job No.: 1705_20 Date: 2017-3-1
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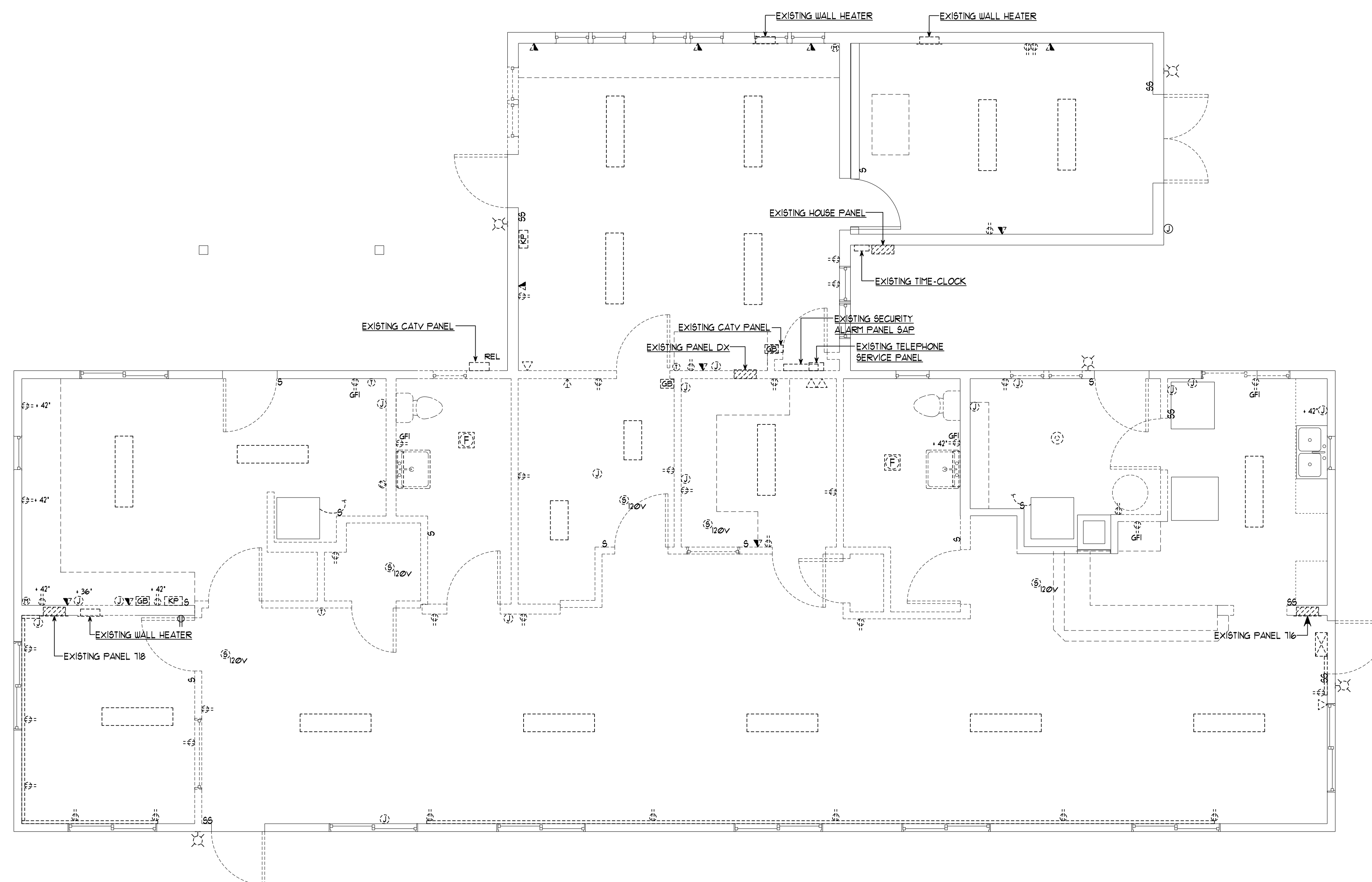
**ELECTRICAL -
 SITE PLAN,
 LEGEND, & NOTES**

E1.1

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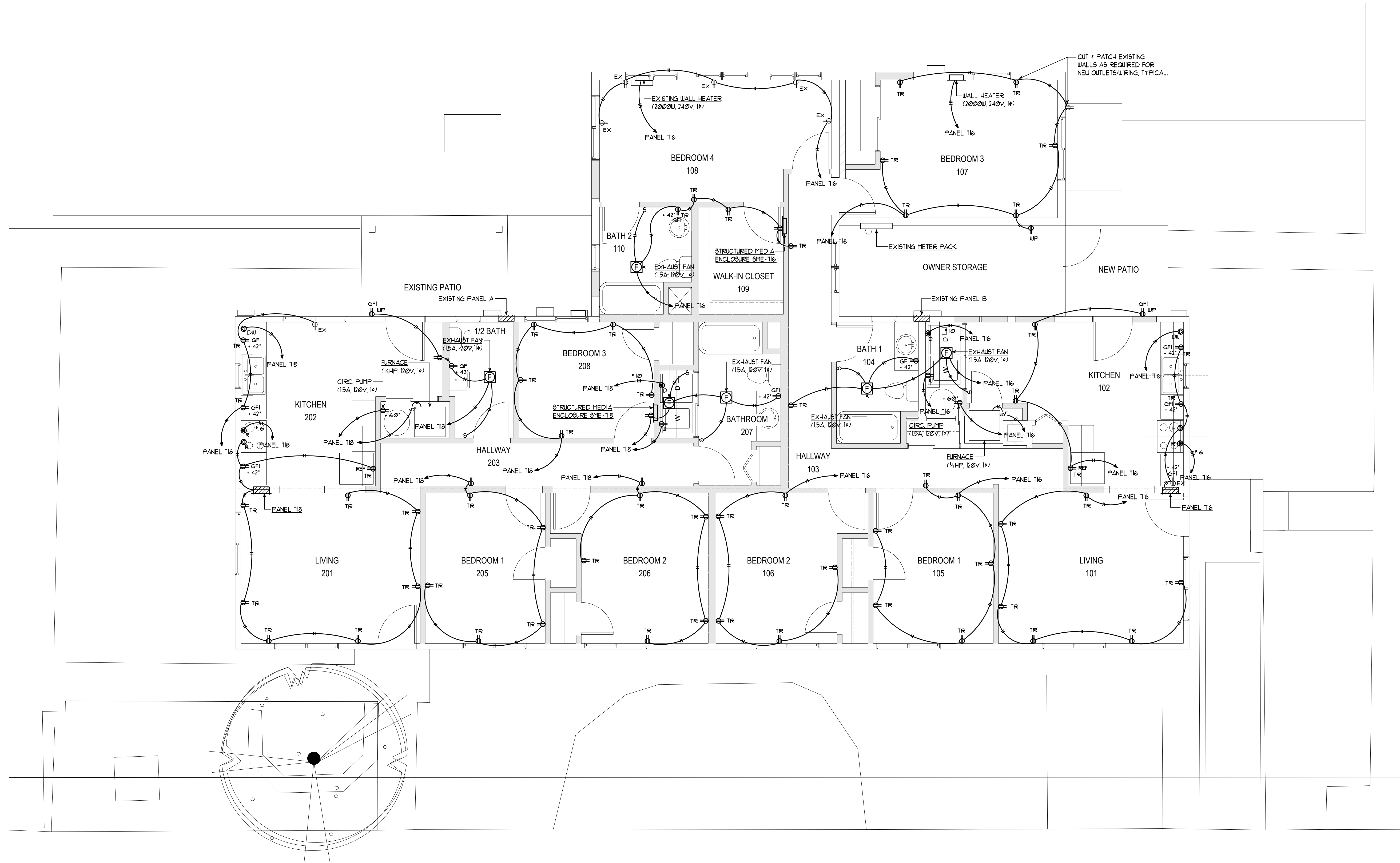
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ELECTRICAL -
 DEMOLITION PLAN

E2.0





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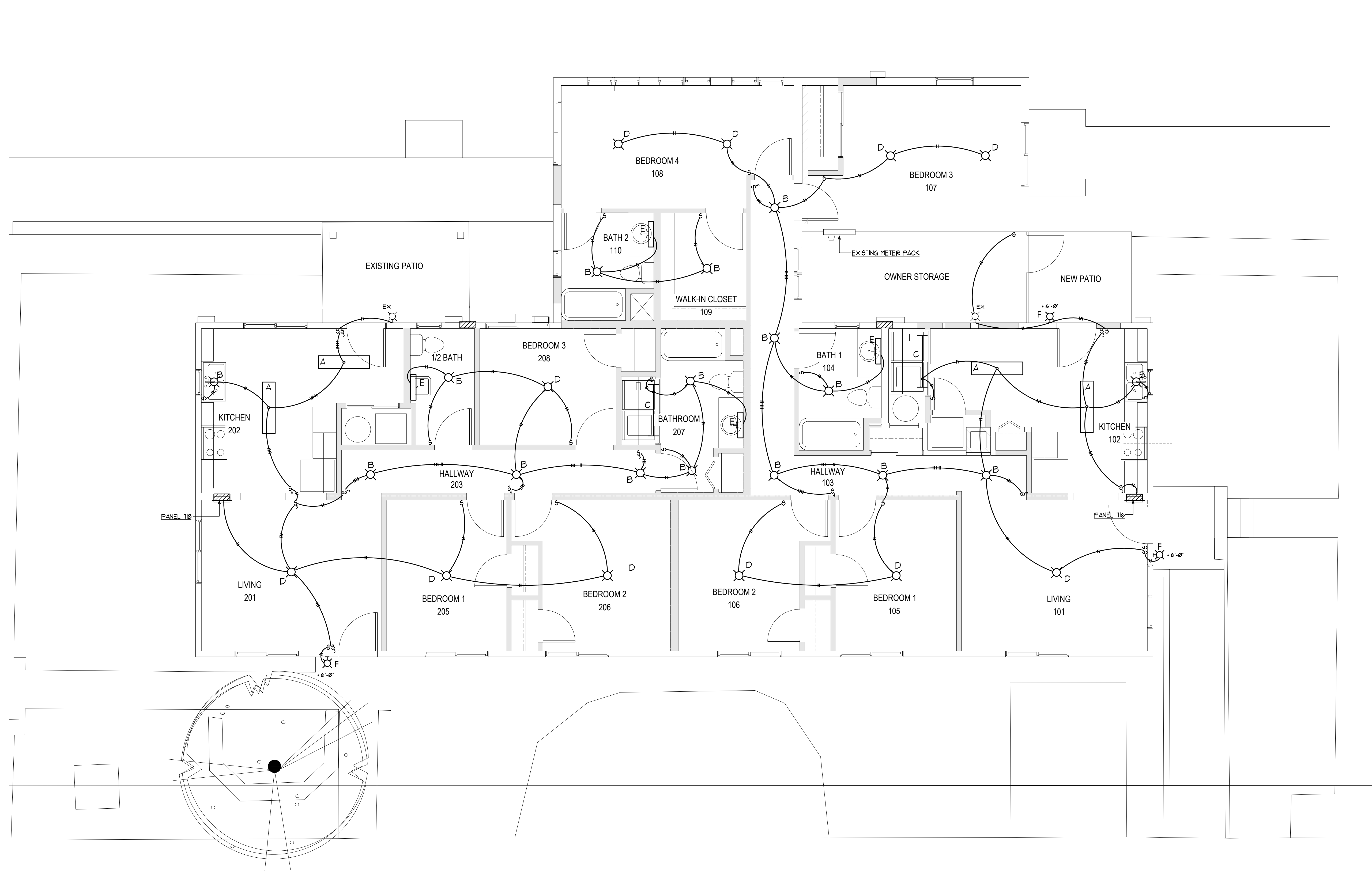
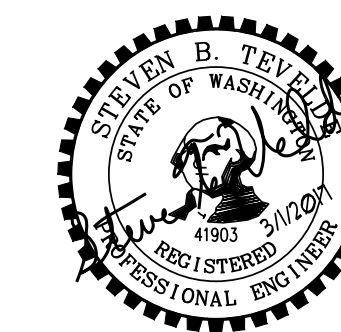
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ELECTRICAL -
 POWER PLAN

E2.1

Electrical - Power Plan
 Scale: 1/4" = 1'-0"





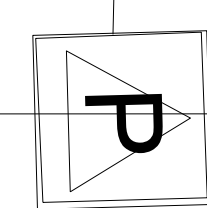
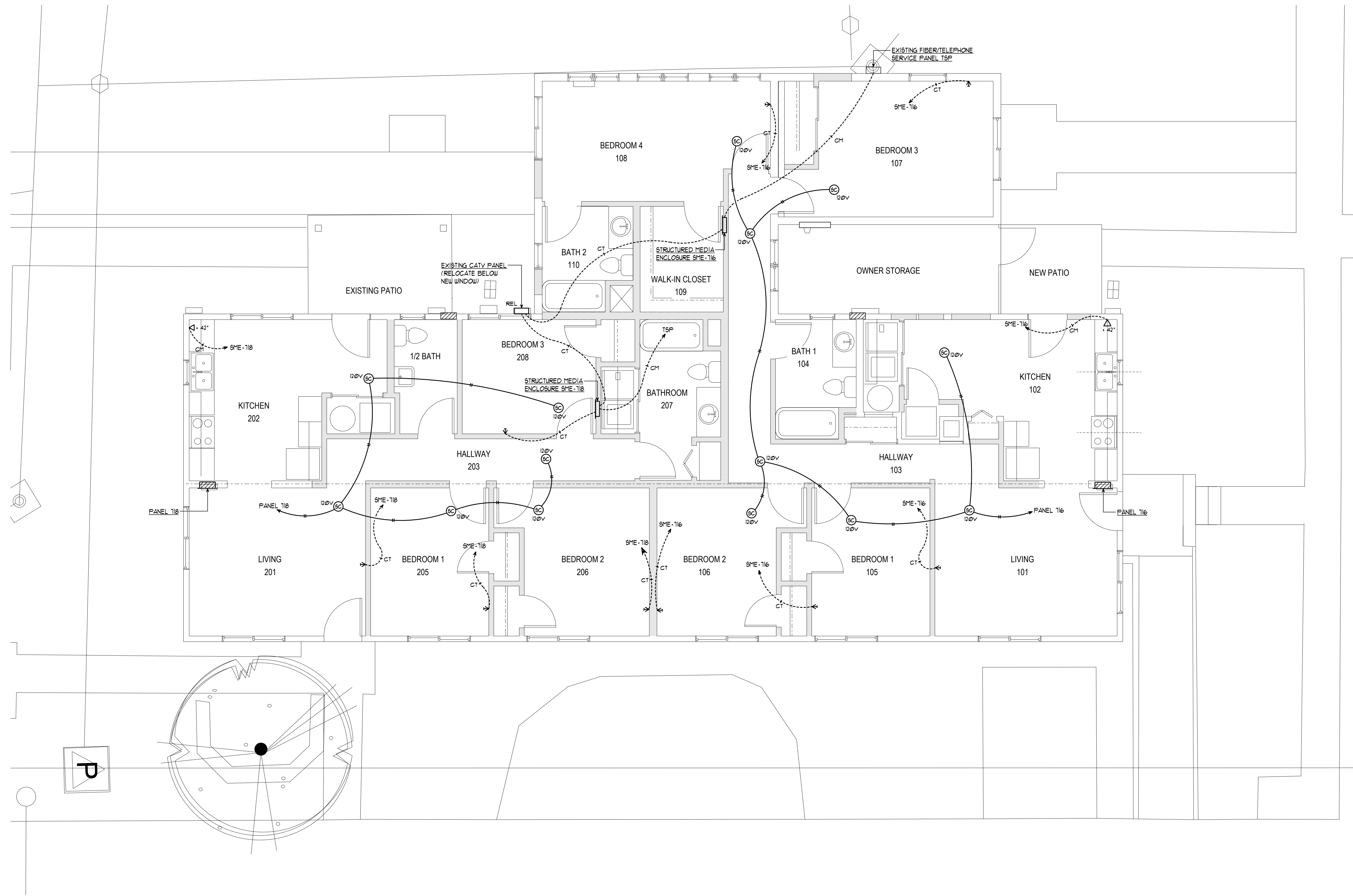
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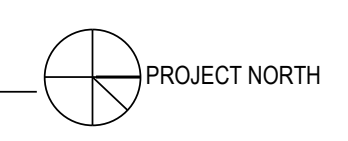
ELECTRICAL -
 LIGHTING PLAN

E3.1





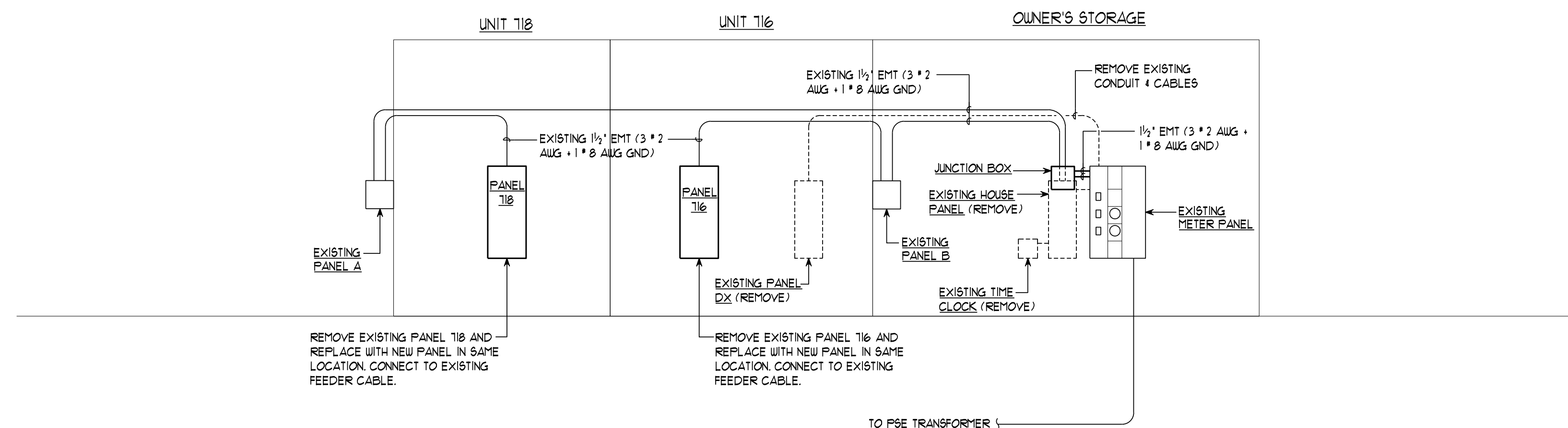
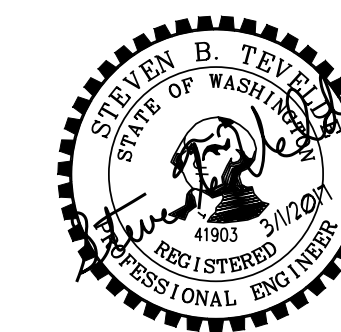
Electrical - Ancillaries Plan
 Scale: 1/4" = 1'-0"



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ELECTRICAL -
 ANCILLARIES PLAN



Electrical - Power Riser Diagram

Scale: None

EXISTING METER PACK (MODIFY)				OWNER STORAGE				
VOLTAG	TYPE	ENCLOSURE	MOUNTING	BUSSING	MAN:	CONN. LOAD (VA)	DEMAND FACTOR	DEMAND LOAD (VA)
120/240V, 1 PH, 3 W	COMMERCIAL MULTI-METERING SWITCHBOARD SQUARE D	NEMA 1	SURFACE	MANUFACTURER'S STANDARD CONTINUOUS RATING: 400 A FULL AIC RATING: NONE	MAN LUGS	0.0	0.40	10000.0
				ELECTRICAL LOAD CALCULATION General Lighting & Outlets (3 WSF) 0.0 7200.0 7200.0 Small Appliance, Kitchen & Laundry 0.0 17600.0 17600.0 Electric Range 0.0 10000.0 10000.0 Electric Clothes Dryer 0.0 4500.0 4500.0 Misc. Fixed Appliances 0.0 48800.0 48800.0 TOTAL 0.0 87856.0 87856.0 Demand Factor (First 10,000W) 1.00 10000.0 Demand Factor (Remainder) 0.40 14720.0 TOTAL LOAD 0.0 97856.0 97856.0 TOTAL AMPS 0.0 407.7 407.7				

NOTES:
 (1) PROVIDE NEW CIRCUIT AND CIRCUIT BREAKER.

EXISTING PANEL A				PATIO				
VOLTAG	TYPE	ENCLOSURE	MOUNTING	BUSSING	MAN:	CONN. LOAD (VA)	DEMAND FACTOR	DEMAND LOAD (VA)
120/240V, 1 PH, 3 W	PANELBOARD	NEMA 1, SQUARE D, QO	SURFACE	MANUFACTURER'S STANDARD CONTINUOUS RATING: 100 A FULL AIC RATING: NONE	CIRCUIT BREAKER CONTINUOUS RATING: 100 A FULL AIC RATING: NONE LOCATION: TOP	0.0	0.0	0.0
				ELECTRICAL LOAD CALCULATION General Lighting & Outlets (3 WSF) 0.0 3000.0 3000.0 Small Appliance, Kitchen & Laundry 0.0 3000.0 3000.0 Electric Range 0.0 8800.0 8800.0 Electric Clothes Dryer 0.0 5000.0 5000.0 Misc. Fixed Appliances 0.0 3000.0 3000.0 TOTAL 0.0 22900.0 22900.0 Demand Factor (First 10,000W) 1.00 10000.0 Demand Factor (Remainder) 0.40 5120.0 TOTAL LOAD 0.0 23928.0 23928.0 TOTAL AMPS 0.0 99.7 99.7				

NEW PANEL 718 (REPLACES EXISTING)				UNIT 718 - 3 BEDROOM / 1000 SQ FT				
VOLTAG	TYPE	ENCLOSURE	MOUNTING	BUSSING	MAN:	CONN. LOAD (VA)	DEMAND FACTOR	DEMAND LOAD (VA)
120/240V, 1 PH, 3 W	LOAD CENTER	NEMA 1	FLUSH	MANUFACTURER'S STANDARD CONTINUOUS RATING: 100 A FULL AIC RATING: 22,000 A SERIES AIC RATING: NONE	LUGS ONLY LOCATION: TOP	0.0	0.0	0.0
				ELECTRICAL LOAD CALCULATION General Lighting & Outlets (3 WSF) 0.0 3000.0 3000.0 Small Appliance, Kitchen & Laundry 0.0 3000.0 3000.0 Electric Range 0.0 8800.0 8800.0 Electric Clothes Dryer 0.0 5000.0 5000.0 Misc. Fixed Appliances 0.0 3000.0 3000.0 TOTAL 0.0 22900.0 22900.0 Demand Factor (First 10,000W) 1.00 10000.0 Demand Factor (Remainder) 0.40 5120.0 TOTAL LOAD 0.0 23928.0 23928.0 TOTAL AMPS 0.0 99.7 99.7				

EXISTING PANEL B				OWNER STORAGE				
VOLTAG	TYPE	ENCLOSURE	MOUNTING	BUSSING	MAN:	CONN. LOAD (VA)	DEMAND FACTOR	DEMAND LOAD (VA)
120/240V, 1 PH, 3 W	PANELBOARD	NEMA 1, SQUARE D, QO	SURFACE	MANUFACTURER'S STANDARD CONTINUOUS RATING: 100 A FULL AIC RATING: NONE	CIRCUIT BREAKER CONTINUOUS RATING: 100 A FULL AIC RATING: NONE LOCATION: TOP	0.0	0.0	0.0
				ELECTRICAL LOAD CALCULATION General Lighting & Outlets (3 WSF) 0.0 4200.0 4200.0 Small Appliance, Kitchen & Laundry 0.0 4500.0 4500.0 Electric Range 0.0 8800.0 8800.0 Electric Clothes Dryer 0.0 5000.0 5000.0 Misc. Fixed Appliances 0.0 1500.0 1500.0 TOTAL 0.0 24000.0 24000.0 Demand Factor (First 10,000W) 1.00 10000.0 Demand Factor (Remainder) 0.40 5600.0 TOTAL LOAD 0.0 27128.0 27128.0 TOTAL AMPS 0.0 113.0 113.0				

NEW PANEL 716 (REPLACES EXISTING)				UNIT 716 - 4 BEDROOM / 1400 SQ FT				
VOLTAG	TYPE	ENCLOSURE	MOUNTING	BUSSING	MAN:	CONN. LOAD (VA)	DEMAND FACTOR	DEMAND LOAD (VA)
120/240V, 1 PH, 3 W	LOAD CENTER	NEMA 1	FLUSH	MANUFACTURER'S STANDARD CONTINUOUS RATING: 100 A FULL AIC RATING: 22,000 A SERIES AIC RATING: NONE	LUGS ONLY LOCATION: TOP	0.0	0.0	0.0
				ELECTRICAL LOAD CALCULATION General Lighting & Outlets (3 WSF) 0.0 4200.0 4200.0 Small Appliance, Kitchen & Laundry 0.0 4500.0 4500.0 Electric Range 0.0 8800.0 8800.0 Electric Clothes Dryer 0.0 5000.0 5000.0 Misc. Fixed Appliances 0.0 1500.0 1500.0 TOTAL 0.0 24000.0 24000.0 Demand Factor (First 10,000W) 1.00 10000.0 Demand Factor (Remainder) 0.40 5600.0 TOTAL LOAD 0.0 27128.0 27128.0 TOTAL AMPS 0.0 113.0 113.0				

LIGHTING FIXTURE SCHEDULE						
TYPE	DESCRIPTION	VOLTS	MANUFACTURER & CAT. NO. (OR APPROVED EQUAL)	LAMP(S)	LOADS WATTS VA	
A	LED WRAPAROUND, SURFACE MTD (UNLESS NOTED OTHERWISE), 1/2" WIDE X 4' LONG, ENERGY STAR RATED, 3480 LUMENS	120	LITHONIA F.M.L. 0 30830 ASL CC-39-3000K-LS2W12	LED 3000K (INTEGRAL)	36 38	
B	7" FLUSH MOUNT LED, 3000K, 820 LUMENS BRUSHED NICKEL FINISH	120	ASL SAS-BN-3000K-D7 NUVO S9349	LED 3000K (INTEGRAL)	14 15	
C	LED CABINET LIGHT, .88" x 39.25" x 1.7", INTEGRAL DRIVER, 800 LUMEN OUTPUT (MIN), 3000K COLOR TEMPERATURE, ALUMINUM HOUSING (WHITE) WITH ACRYLIC LENS & END CAPS.	120	PHILIPS EW PROFILE POWERCORE 523-00002-74	LED 3000K (INTEGRAL)	20 22	
D	LED SURFACE DRUM, CEILING MTD, 13" DIA, 5" HIGH WITH ICED SATIN RIBBED GLASS LENS, BRUSHED NICKEL FINISH BASE, 20W, 3000K, 2000 LUMEN, ENERGY STAR RATED.	120	AMERICAN SCIENTIFIC LIGHTING (ASL) RFM-20-3000K-D13-FSN	LED 3000K (INTEGRAL)	22 23	
E	WALL MTD, LED BATHROOM BRACKET, 23 1/2" x 4 7/8" x 4 1/2", ACRYLIC WRAPAROUND DIFFUSER & SATIN NICKEL ACCENTS (ASL), 13W, 1383 LUMENS, ENERGY STAR RATED.	120	AMERICAN SCIENTIFIC LIGHTING (ASL) VBD-13-3000K-L25-FSN	LED 3000K (INTEGRAL)	13 14	
F	EXTERIOR FLOURESCENT WALL PACK WITH CLEAR LENS, 10.5" x 6" x 4", SINGLE 13W BULB.	120	SUNSET LIGHTING SL-F7211-30	PL 13W LAMP	13 14	

NOTES:
 1. CABLES IN FIXTURE WHIPS FURNISHED BY THE MANUFACTURER WITH THE FIXTURES SHALL NOT BE SMALLER THAN #14 AWG. AND SHALL INCLUDE A SEPARATE GROUND CONDUCTOR SIZED THE SAME AS THE CIRCUIT CONDUCTORS.
 2. CONTRACTOR & LIGHTING FIXTURE SUPPLIER SHALL VERIFY DESCRIPTION, MOUNTING REQUIREMENTS, CATALOG NUMBERS, ETC. MATCH. ADVISE ENGINEER OF ANY CONFLICTS OR DISCREPANCIES.

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ELECTRICAL -
 POWER RISER
 DIAGRAM,
 PANEL & FIXTURE
 SCHEDULES

E6.1