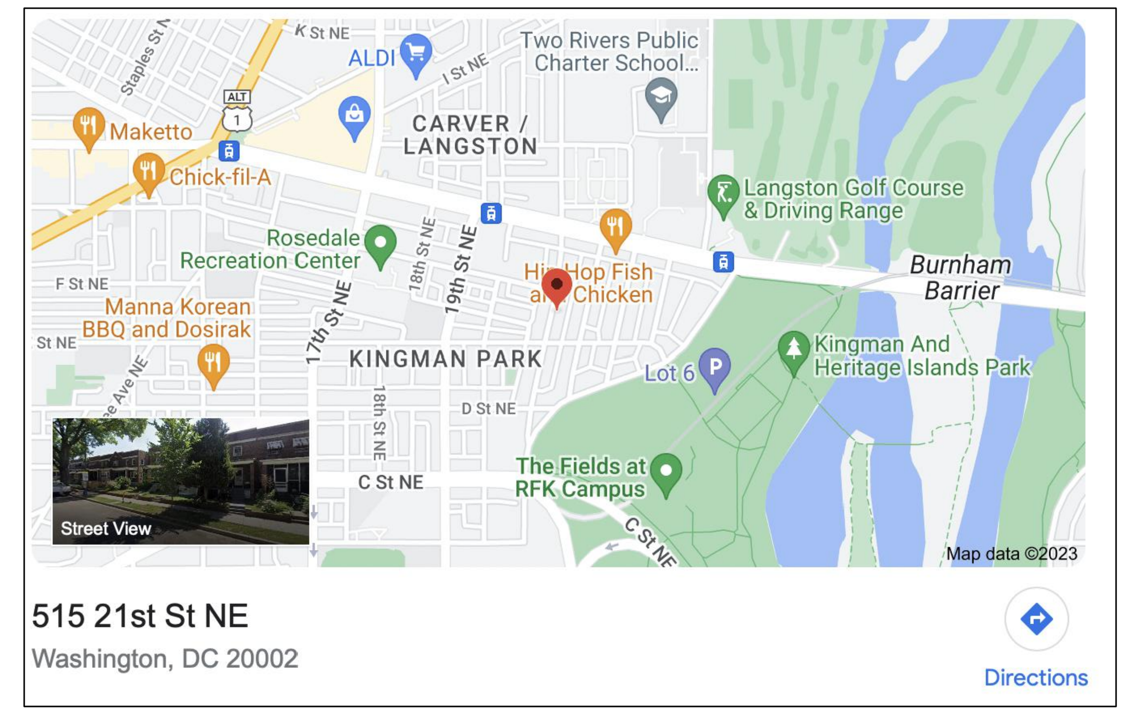
EXHIBIT 12B 2 of 4 Architectural Plans - Pgs 10-13

Board of Zoning Adjustment
District of Columbia
CASE NO.21316
EXHIBIT NO.12A2

ALTERATION / ADDITION
515 21 st STREET, NE
WASHINGTON DC



Vicinity Map

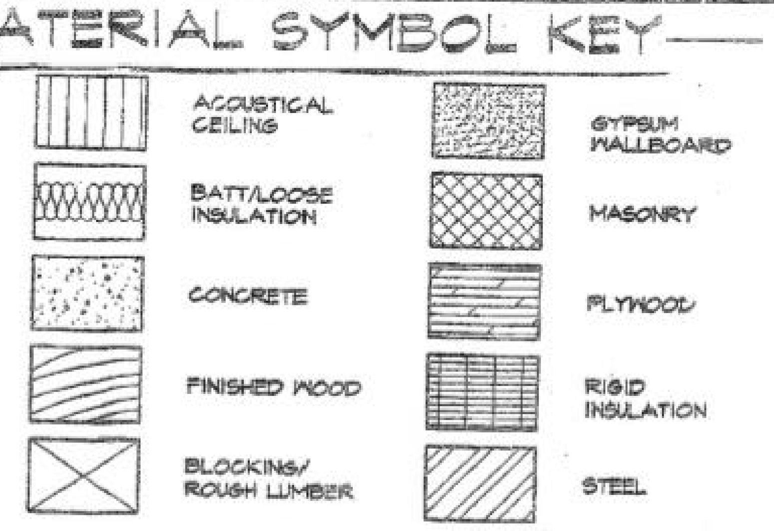
CODE ANALYSIS

INTERNATIONAL RESIDENTIAL CODE EDITION USE	2017
CONSTRUCTION TYPE	5A
USE GROUP	R-3
BUILDING IS NOT SPRINKLERED	
FLOOR SYSTEM	SUPRESSION SYS. NO
FIRE ALARM SYSTEM	EXISTING NO PROPOSED NO

ABBREVIATIONS

&	AND	FT	FOOT OR FEET
@	AT	GYP. BD	GYPSUM BOARD
℄	CENTERLINE	INSUL	INSULATION
ACT	ACOUSTICAL	MAS.	MASONRY
A.F.F	ABOVE FINISH FLOOR	MAX	MAXIMUM
ALUM	ALUMINUM	MECH	MECHANICAL
APPROX.	APPROXIMATE	MIN	MINIMUM
BLDG	BUILDING	MISC	MISCELLANEOUS
CLG	CEILING	MTD	MOUNTED
C.M.U	CONCRETE MASONRY UNIT	N.I.C	NOT IN CONTRACT
CONST	CONSTRUCTION	O.C	ON CENTER
COL	COLUMN	O.H	OVERHANG
CONC	CONCRETE	PLYWD	PLYWOOD
CONT	CONTINUOUS	PTD	PAINTED
CORR	CORRIDOR	PT	PRESSURE TREATED
DBL	DOUBLE	REINF	REINFORCED
D.S	DOWNSPOUT	RM	ROOM
DTL	DETAIL	R.O	ROUGH OPENING
DN	DOWN	SECT	SECTION
ELEV	ELEVATION	SIM	SIMILAR
ELEC	ELECTRICAL	STL	STEEL
EQ	EQUAL	T.O	TOP OF
EXIST	EXISTING	TYP	TYPICAL
EXP	EXPANSION	U.O.N	UNLESS OTHERWISE NOTED
EXT	EXTERIOR	WD	WOOD
FL	FLOOR	W.W.F	WELDED WIRE FABRIC

MATERIAL SYMBOL KEY



SCOPE OF WORK

- CONSTRUCT NEW 11'-0" X 18'-0" ADDITION AT THE REAR
- EXISTING MECHANICAL SYSTEM TO REMAIN
- ADD BATHROOM
- REPLACE ELECTRICAL OUTLETS / LIGHT FIXTURES
- REPLACE DRYWALL
- PAINT INTERIOR WALLS
- INSTALL BATHROOM ROOM EQUIPMENT
- INSTALL CARPET IN LIVING ROOM

DRAWING INDEX

CS	COVER SHEET
A-1	FLOOR PLANS - EXISTING
AE-1	FLOOR PLANS - PROPOSED / ELECT.
S-1	FOUNDATION / FRAMING / REAR ELEVATION
E-1	ELECTRICAL COVER SHEET
E-2	FLOOR PLANS ELECTRICAL
M-1	MECHANICAL COVER SHEET
M-2	FLOOR PLANS MECHANICAL
P-1	PLUMBING COVER SHEET
P-2	FLOOR PLANS PLUMING
P-3	PLUMBING RISER DIAGRAMS
W-1	WIND BRACING DETAIL
GB-001	GREEN
SEC-1	SEDIMENT CONTROL PLAN
SEC-2	SEDIMENT CONTROL DETAILS
Z-01	ZONING
S-2	SECTION

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No.	Revision/Issue	Date

Consultants
Sunday Ojigbo
(B.S. Arch/ M.S. Planning)
2409 Oxon Run Drive
Temple Hills, Md 20744

Sheet Title

COVER SHEET

Project No.		Sheet
Date	1-25-22	CS
Drawn By	RFM	
Scale	AS SHOWN	

GOVERNMENT OF THE DISTRICT OF COLUMBIA
PERMIT OPERATIONS DIVISION
PLANS APPROVED
Permit No. B2207012 Date 06/30/23

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RF-1

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DC DEPARTMENT OF BUILDINGS
OFFICE OF THE ZONING ADMINISTRATION
COMPLIES WITH THE REQUIREMENTS
OF 11 DCMR – ZONING REGULATIONS
OF THE DISTRICT OF COLUMBIA

DOB DC DEPARTMENT OF BUILDINGS
GOVERNMENT OF THE DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

5/9/2023

GOVERNMENT OF THE DISTRICT OF COLUMBIA
PERMIT OPERATIONS DIVISION
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electrical notes

1. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2. CIRCUIT NUMBERS SHOWN ARE FOR IDENTIFICATION ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO BALANCE ALL PHASES IN THE PANELBOARD. (BALANCE LOAD).
3. SEE MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL MOTORS AND OTHER EQUIPMENT BEFORE ROUGH-IN.
4. WHERE WIRE SIZES ARE INDICATED ON THE PLANS FOR INDIVIDUAL CIRCUITS, THE INDICATED WIRE SIZE SHALL APPLY TO THE COMPLETE CIRCUIT UNLESS OTHERWISE NOTED.
5. THE CONTRACTOR SHALL VERIFY ALL EQUIPMENT NOT FURNISHED UNDER THIS SECTION BEFORE ROUGH-IN.
6. SEE ARCHITECTURAL PLANS FOR EXACT LOCATION OF BUILDING EQUIPMENT BEFORE ROUGH-IN.
7. CONDUIT AND/OR CABLE RUNS ARE SHOWN SCHEMATICALLY. BUILDING CONDITION WILL DETERMINE ACTUAL RUNS.
8. MODULAR METERING EQUIPMENT WHEN USED IN CONJUNCTION WITH STANDARD 10K CIRCUIT BREAKER IN BUILDING LOAD CENTERS, SHALL BE SERIES RATED FOR MINIMUM 22K RMS SYMMETRICAL AMPERES.
9. ALL JUNCTION BOXES SHALL BE OF CODED GAUGE AND OF THE SIZE, REQUIRED TO ACCOMMODATE CONSTRUCTION SHOWN.
10. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL EQUIPMENT REQUIRING ELECTRICAL CONNECTION BEFORE ROUGH-IN.
11. THE CONTRACTOR SHALL VERIFY WITH THE MANUFACTURER THE EXACT LOCATION OF CONNECTION BOX TO MECHANICAL EQUIPMENT BEFORE ROUGH-IN.
12. THE CONTRACTOR SHALL EXTEND WIRING FROM THE JUNCTION BOX, RECEPTACLE, ETC., AND MAKE FINAL CONNECTION TO ALL BUILDING ELECTRICAL CONNECTIONS.
13. ALL WORKMANSHIP, MATERIALS AND EQUIPMENT SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER THE ACCEPTANCE OF CONSTRUCTION BY THE OWNER.
14. LOAD CENTER SHALL BE THE CIRCUIT BREAKER TYPE AS MANUFACTURED BY SQUARE D CO., CUTTLER HAMMER OR EQUAL.
15. THE CONTRACTOR SHALL VISIT EXISTING SITE AND DETERMINE WHICH MATERIALS EFFECT HIS BID.
16. THE CONTRACTOR SHALL RESTORE ALL SYSTEMS AND AREAS DISTURBED BY HIS WORK TO THE SATISFACTION OF THE OWNER AND DEVELOPER.
17. THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND CERTIFICATIONS OF INSPECTIONS INCLUDING THE COST OF SAME IN HIS CONTRACT.
18. ALL NEW MATERIALS FURNISHED FOR THIS PROJECT SHALL BE LISTED BY THE UNDERWRITER'S LAVATORIES, INC.
19. ALL PHOTOCELLS SHALL BE WEATHERPROOFED, SURFACED MOUNTED WITH CORROSION PROOF PLATE AND SHALL BE MANUFACTURED BY TORK OR SIMILAR.
20. THE CONTRACTOR MUST ASSURE EQUIPMENT GROUNDING SYSTEM CONTINUITY.
21. THERMOSTAT WIRING SHALL BE AS PER DIAGRAM BY UNIT MANUFACTURER, SEE MECHANICAL PLANS FOR EXACT LOCATION.
22. ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE NEC 2014, AND OTHER RULES AND REGULATIONS OF THE LOCAL ELECTRICAL AND BUILDING CODES.
23. ALL WIRING SHALL BE "BX" WITH COPPER GROUND.
24. OUTLETS MOUNTED ON COMMON WALL SHALL NOT BE MOUNTED BACK TO BACK. THEY SHALL BE STAGGERED TO PREVENT SOUND TRANSMISSION.
25. NUMBER AND SIZE OF CONNECTORS, CONDUIT, CONTROL PANEL AND ANNUNCIATOR FOR THE FIRE ALARM PANEL SHALL BE RECOMMENDED BY MANUFACTURER TO PERFORM WORK AS REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.
26. UNIT SHALL BE PREWIRED WITH A MINIMUM OF 2 PAIR OF 24 AWG TELEPHONE CABLES USING MODULRAS JACKS, TERMINATING IN STANDARD NETWORK INTERFACE AS REQUIRED BY C & P TELEPHONE COMPANY.
27. THE CONTRACTOR SHALL COORDINATE DOOR ENTRY SYSTEM REQUIREMENTS WITH OWNER PRIOR TO ROUGH-IN AND PROVIDE ALL NECESSARY COMPONENTS TO ENSURE THAT A COMPLETE OPERATING SYSTEM IS PROVIDED.
28. BRANCH CIRCUIT CONNECTORS SHALL BE MINIMUM NO. 12 AWG, HOMERUNS SHALL BE NO. 10 AWG = TW INSULATION +/- LARGER = THW INSULATION +/- FEEDERS = TWH +/- OUTSIDE OR UNDERGROUND FEEDERS = THWN INSULATION.
29. AFCI OUTLETS IN ALL HABITABLE ROOMS.
30. CARBON MONOXIDE ALARMS ARE REQUIRED FOR THE DWELLING UNIT WHERE FUEL FIRED APPLIANCES ARE INSTALLED. [2017 DCBC 908.7]
31. BATHROOMS REQUIRE ONE DEDICATED 20 AMPERE CIRCUIT FOR THE OUTLETS TO LIGHTING, RECEPTACLES IN EACH BATHROOM [2017 DCEC 210.11 (C)(3)]
32. THE WATER HEATER MUST HAVE A CODE COMPLIANT DISCONNECTING MEANS UNLESS IT IS FUEL-FIRED. [2017DCEC 422.30 & 422.31 (B)]
33. SERVICING OUTLET WITHIN 25' PER NEC 2014
34. LUMINAIRES OVER BATHTUBS SHALL BE RATED FOR " DAMP LOCATION" LUMINAIRES OVER SHOWERS MUST BE RATED FOR "WET LOCATION

electrical graphical symbols

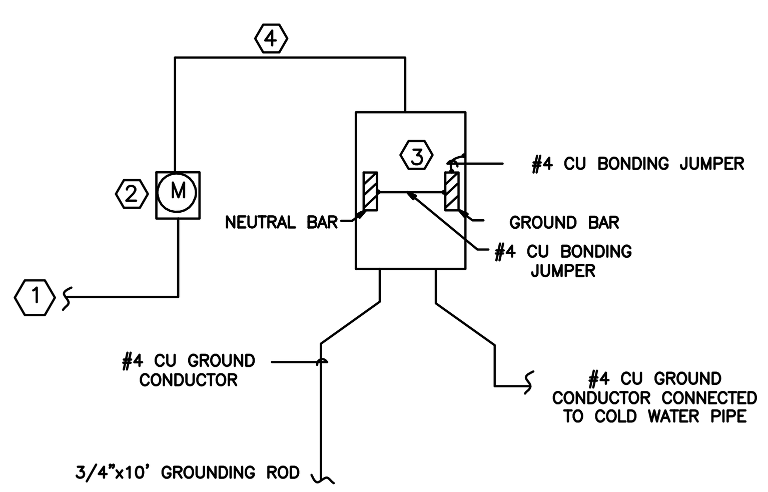
- THERMOSTAT
- RECESSED LIGHTING
- EXHAUST FAN
- ELECTRICAL PANEL
- 220v HEAVY DUTY OUTLET
- ELECTRIC METER
- $ SINGLE P0LE LIGHT SWITCH
- HARDWIRE SMOKE DETECTOR WITH BATTERY BACKUP AND INTERCONNECTED AND CARBONMONOXIDE
- PC INCANDESCENT LIGHT W/ PULL CHAIN
- INCANDESCENT WALL MOUNTED LIGHT FIXTURE
- AFCI ARC-FAULT INTERRUPT IN ALL HABITABLE ROOMS
- $3 THREE WAY LIGHT SWITCH
- CO CARBON MONOXIDE
- CEILING MOUNTED INCANDESCENT FIXTURE
- GARBAGE DISPOSAL
- WP WEATHERPROOF OUTLET
- GFI GROUND FAULT INTERRUPT
- DUPLEX RECEPTOR
- DISCONNECT SWITCH

energy notes:

- 85% OF ALL PERMANENT FIXTURES OR 85% LAMPS IN PERMANENT FIXTURES USED ARE TO BE HIGH EFFICIENT LAMPS. IC-RATED RECESSED LIGHTING FIXTURES SEALED AT HOUSING/INTERIOR FINISH AND LABELED TO INDICATE LESS OR EQUAL TO 2 CFM LEAKAGE AT 75 PA.

LOAD CALCULATION

1. A. GENERAL LIGHTING LOAD 2500 S.F. x 3 VA	2500 S.F. x 3VA = 7,500VA
B. SMALL APPLIANCE LOADS 1500 VA x 2 CIRCUITS	2X1500 VA = 3000 VA
SUBTOTAL FIRST 3000 VA x 100% NEXT 7,500 VA x 45% TOTAL	10,500 VA 3000 VA 7,500 VA x 45% = 3,375 VA 6,375 VA
2. COOKING 0 VA	0 VA
3. FIXED APPLIANCE LOADS DISHWASHER 800 VA x 1 DISPOSAL 800 VA x 1 REFRIGERATOR 800 VA x 1	800 VA 800 VA 800 VA
4. HEATING OR COOLING LOAD HEATING – VA x 0 COOLING – VA x 1 LARGEST LOAD	0VA 4,000 VA 4,000 VA
TOTAL LOAD	12,775 VA 12,775/240V = 53A SERVICE 200 AMP



ELECTRICAL GROUNDING DETAIL
SCALE: NO SCALE

POWER RISER NOTES

1. EXISTING INCOMING ELECTRICAL SERVICE.
2. EXISTING METER.
3. EXISTING PANEL "A" 200A, 120/240V, 1 PHASE, 3 WIRES, MCB.
4. NEW 3# 3/0 AND 1#4 GROUND IN CABLE.

PANELBOARD SCHEDULE

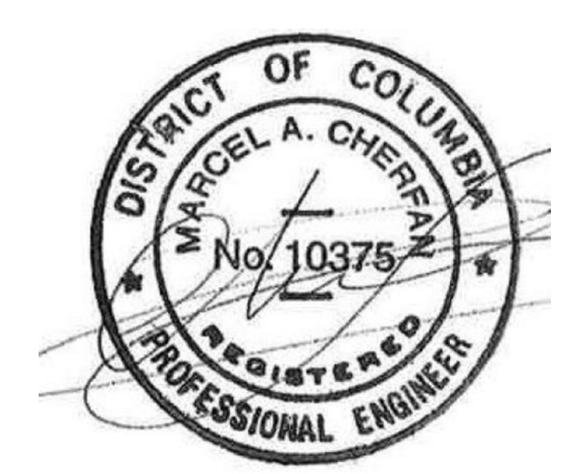
PANEL: A
LOCATION: SEE PLAN
MOUNTING: RECESSED
FED FROM:
EQUIP. GND. BUS: ☑
ISOLATED GND BUS: ☐
NEUTRAL BUS: 100% ☑ 200% ☐
A.I.C.: 10K
VOLTAGE: 120/240 VOLT, 1PH, 3W
MAIN CIRCUIT BKR: 200A
MLO: ☐
BUS RATING: 200A

LOAD DESCRIPTION	BKR. AMPS	BKR. POLE	CKT. NO.	LOAD - V.A. A	LOAD - V.A. B	CKT. NO.	BKR. POLE	BKR. AMPS	LOAD DESCRIPTION
GFI RECEPTACLES	20	1	1	180					RECEPTACLES
				360		2	1	20	
RECEPTACLES	20	1	3		540				RECEPTACLES
					360	4	1	20	
WP/GFI RECEPTACLES	20	1	5	180					RECEPTACLES
				360		6	1	20	
AHU-1	20	1	7		1,200				WATER HEATER
					200	8	1	20	
RECEPTACLES	20	1	9	540					WP/GFI RECEPTACLES
				180		10	1	20	
RECEPTACLES	20	1	11		900				MICROWAVE
					800	12	1	20	
GARBAGE DISPOSAL	20	1	13	800					DISHWASHER
				800		14	1	20	
MICROWAVE	20	1	15		800				REFRIGERATOR
					800	16	1	20	
HOOD/FAN	20	1	17	400					RECEPTACLES
				540		18	1	20	
RECEPTACLES	20	1	19		900				RECEPTACLES
					720	20	1	20	
GFI RECEPTACLES	20	1	21	360					RECEPTACLES
				540		22	1	20	
RECEPTACLES	20	1	23		720				LIGTHING
					250	24	1	20	
LIGHTING	20	1	25	200					SPARE
						26	1	20	
LIGTHING	20	1	27		350				SPARE
						28	1	20	
SPARE	20	1	29						SPARE
						30	1	20	
SPARE	20	1	31						SPARE
						32	1	20	
	25	2	33	2,016					SPARE
						34	1	20	
CU-1			35		2,016				SPARE
						36	1	20	
SPARE	20	1	37						SPARE
						38	1	20	
SPARE	20	1	39						SPARE
						40	1	20	
	TOTAL VA			7,456	10,556	TOTAL KVA		18.0	
	TOTAL AMP/PHASE			62	88	TOTAL AMP		75	

REMARKS:

LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE	MANUFACTURER	CATALOG No.	LAMP No.	LAMP TYPE	VOLTS	MOUNTING	LOCATION	REMARKS	LUMENS	LPW
○	LITHONIA	LC6LEDT24GSKT	1	11W LED	120	RECESSED	AS SHOWN	6" LED, IC RATED, FOAM GASKETING	1000	91
○	PRESCOLIGHT	FT60LIC-LB6LEDA10L 35KWH LIGHT BOX LED	1	20W LED	120	RECESSED	TOILET	WET LOCATION FOAM GASKETING	1300	65
□	PROGRESS	P560051-031-30	1	9W LED	120	R	EXTERIOR	EXTERIOR LED LIGHT	500	55



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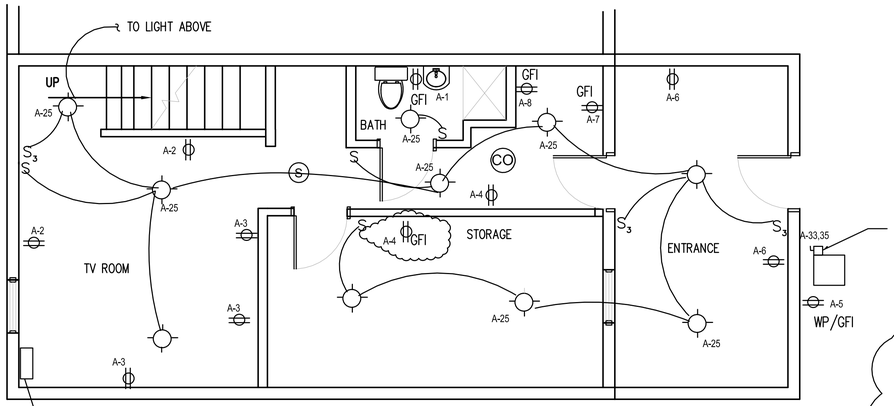
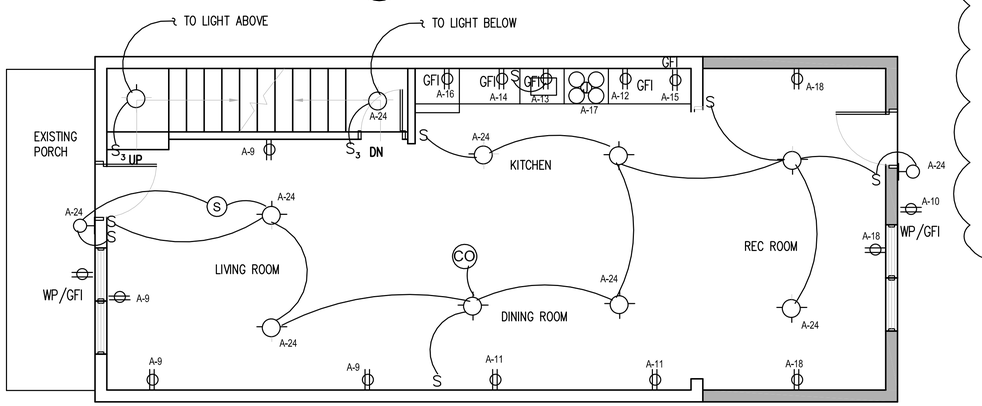
Sheet Title

ELECTRICAL COVER SHEET

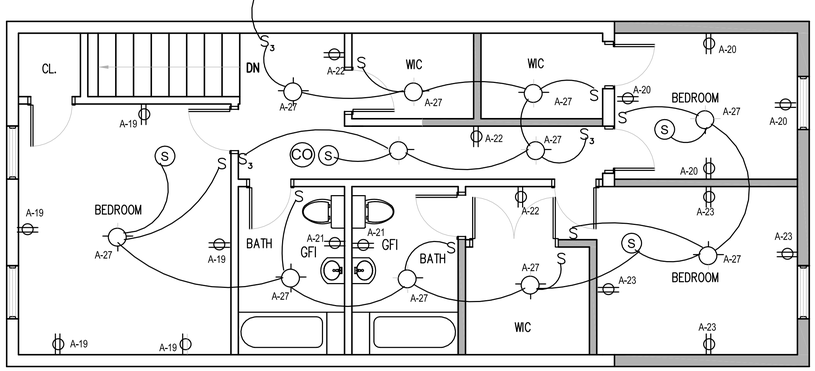
Project No.	Sheet
Date 1-25-22	E-1
Drawn By RFM	
Scale AS SHOWN	



01 PROPOSED BASEMENT FLOOR
SCALE : 1/4" = 1'-0"



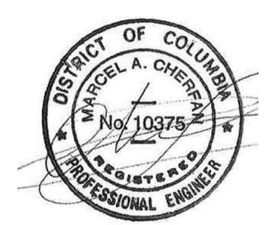
02 PROPOSED FIRST FLOOR
SCALE : 1/4" = 1'-0"



03 PROPOSED SECOND FLOOR
SCALE : 1/4" = 1'-0"

GENERAL APARTMENT NOTES:

1. ALL SMOKE DETECTORS AND CARBON MONOXIDE DETECTORS IN UNITS ARE TO BE 110 VOLT WITH AUDIBLE ALARM AND BATTERY BACKUP AND INTERCONNECTED AND SIMULTANEOUSLY ALARM WHEN ANY SINGLE DETECTOR IS ACTIVATED.
2. ALL 20A/1 AND 15A/1 POLE CIRCUIT BREAKERS EXCEPT EXTERIOR SHALL BE AFCI TYPE. PER 2017 DCEC 2012.12.
3. ALL KITCHEN (15A & 20A, 120 VOLT), TOILET AND EXTERIOR OUTLETS AND WITHIN 6' OF WATER SOURCE SHALL BE GFCI TYPE OR CIRCUIT BREAKER TO BE GFCI TYPE.
4. PROVIDE MICROWAVE/RANGEHOOD OUTLET 78" AFF.
5. COORDINATE IN THE FIELD FOR EXACT LOCATION OF ALL MECHANICAL UNITS.
6. INSTALL TAMPER RESISTANCE NON-LOCKING TYPE RECEPTACLES FOR ALL NON-FIXED APPLIANCE RECEPTACLES.



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FLOOR PLANS- ELECTRICAL

Project No.	Sheet
Date 1-25-22	E-2
Drawn By RFM	
Scale AS SHOWN	

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R402 BUILDING THERMAL ENVELOPE

Strike Section R402.1 of the International Energy Conservation Code in its entirety and insert new Section R402.1 in the Energy Conservation Code-Residential Provisions in its place to read as follows:

R402.1 General (Prescriptive).

The building thermal envelope shall meet the requirements of Sections R402.1.2 through R402.1.5.

Exception: The following low-energy buildings, or portions thereof, separated from the remainder of the building by building thermal envelope assemblies complying with this section shall be exempt from the building thermal envelope provisions of Section R402.

1. Those with a peak design rate of energy usage less than 3.4 Btu/h · ft2 (10.7 W/m2) or 1.0 watt/ft2 of floor area for space-conditioning purposes.
2. Those that do not contain conditioned space.

Strike Section R402.1.1 of the International Energy Conservation Code in its entirety without substitution.

Strike Section R402.1.2 of the International Energy Conservation Code in its entirety and insert new section R402.1.2 in the Energy Conservation Code-Residential Provisions in its place to read as follows.

R402.1.2 Insulation and fenestration criteria. The *building thermal envelope* shall meet the requirements of Table R402.1.2.

Strike Table R402.1.2 of the International Energy Conservation Code in its entirety and insert new Table R402.1.2 in the Energy Conservation Code-Residential Provisions in its place to read as follows.

TABLE R402.1.2
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT[a]

FENESTRATION U-FACTOR[b]	0.30 U-Factor
SKYLIGHT[b] U-FACTOR	0.55 U-Factor
GLAZED FENESTRATION SHGC[b]	0.40 Solar Heat Gain Coefficient (SHGC)
CEILING	R-49
WOOD FRAME WALL AND RIM JOISTS	R-19 in cavity + R-5 continuous on the exterior, or R-13 in cavity + R-10 continuous on the exterior, or R-15 continuous
MASS WALL[i]	R-15 continuous on the exterior, or R-20 continuous on the interior
FRAME FLOOR	R-25 + R-5 continuous
ELEVATED SLAB	R-15 continuous
BASEMENT WALL	R-19 cavity + R-5 continuous on the exterior, or R-13 in cavity + R-10 continuous on the exterior, or R-15 continuous
SLAB ON GRADE[d]	R-10 perimeter insulation for a depth of 2 ft
CONDITIONED CRAWLSPACE WALL	R-19 cavity + R-5 continuous on the exterior, or R-13 in cavity + R-10 continuous on the exterior, or R-15 continuous

For SI: 1 foot = 304.8 mm.

a. R-values are minimums. *U*-factors and SHGC are maximums. When insulation is installed in a cavity which is less than the label or design thickness of the insulation, the installed *R*-value of the insulation shall not be less than the *R*-value specified in the table.
b. The fenestration *U*-factor column excludes skylights. The SHGC column applies to all glazed fenestration.
c. The second *R*-value applies when more than half the insulation is on the interior of the mass wall.
d. R-5 shall be added to the required slab edge R-values for heated slabs

R403 SYSTEMS

Strike Section R403.3.1 of the International Energy Conservation Code in its entirety and insert new Section R403.3.1 in the Energy Conservation Code-Residential Provisions in its place to read as follows.

R403.3.1 Insulation (Mandatory). Supply and return ducts outside of the *building thermal envelope* shall be insulated to a minimum of R-8.

Exception: Where ducts are less than 3 inches (76mm) in diameter, a minimum of R6 is allowed.

Strike Section R403.3.2.1 of the International Energy Conservation Code in its entirety and insert new Section R403.3.2.1 in the Energy Conservation Code-Residential Provisions in its place to read as follows.

R403.3.2.1 Sealed air handler. Air handlers shall have a manufacturer's designation for an air leakage of no more than 2 percent of the design air flow rate when tested in accordance with ASHRAE 193.

Exception: ENERGY STAR-certified heating and cooling systems are deemed to be compliant.

Strike Section R403.3.3 of the International Energy Conservation Code in its entirety and insert new Section R403.3.3 in the Energy Conservation Code-Residential Provisions in its place to read as follows.

R402.1.3 *R*-value computation. (no change)

R402.1.4 *U*-factor alternative.

Strike Table R402.1.4 of the International Energy Conservation Code in its entirety and insert new Table R402.1.4 in the Energy Conservation Code-Residential Provisions in its place to read as follows.

TABLE R402.1.4
EQUIVALENT *U*-FACTORS[a]

FENESTRATION *U*-FACTOR	0.30 *U*-Factor
SKYLIGHT *U*-FACTOR	0.55 *U*-Factor
CEILING *U*-FACTOR	0.026 *U*-Factor
WOOD FRAME WALL *U*-FACTOR	0.045 *U*-Factor
MASS WALL *U*-FACTOR	0.060 *U*-Factor
FRAME FLOOR *U*-FACTOR	0.033 *U*-Factor
ELEVATED SLAB	0.066 *U*-Factor
MASS FLOOR *U*-FACTOR	0.058 *U*-Factor
BASEMENT WALL *U*-FACTOR	0.045 *U*-Factor
CONDITIONED CRAWLSPACE WALL *U*-FACTOR	0.045 *U*-Factor

a. Nonfenestration *U*-factors shall be obtained from measurement, calculation or an approved source.

R402.1.5 Total UA alternative. (no change)

R402.2 Specific insulation requirements (Prescriptive).

Strike Section R402.2.1 of the International Energy Conservation Code in its entirety and insert new section R402.2.1 in the Energy Conservation Code in its place to read as follows.

R402.2.1 Ceilings with attic spaces. Where Section R402.1.2 would require R-49 insulation in the ceiling but the depth of the roof rafters does not allow R49, the ceiling insulation value may be reduced to R-38. This reduction shall not apply to the *U*-factor alternative approach in Section R402.1.4 and the total UA alternative in Section R402.1.5.

.1.2 of the International Energy Conservation Code in its entirety tion R402.4.1.2 in the Energy Conservation Code-Residential : to read as follows.

ir Leakage Testing. Each *dwelling unit* shall comply with Table Testing shall be conducted in accordance with ASTM E 779 or :7 and reported at a pressure of 0.2 inch w.g. (50 Pascals). Testing ucted by an *approved* third party. A written report of the results of l be signed by the *approved* third party conducting the test and provided to the *code official* before issuance of the certificate of occupancy or final inspection. Testing shall be performed at any time after creation of all penetrations of the *building thermal envelope*. *Approved* sampling protocols approved by the *code official* may be used.

Insert new Table R402.4.1.2 in the Energy Conservation Code-Residential Provisions to read as follows.

TABLE R402.4.1.2
MAXIMUM ALLOWED AIR LEAKAGE RATES

	New construction	Level 3 Alteration affecting 80% or more of the aggregate work of the building (Gut Rehabilitation)
Single family detached, two family	3 ACH50	3 ACH50
attached (duplex), townhouses, flats		
Dwelling units in Multifamily buildings 3 stories and less	.30 CFM50/SF enclosure area of each unit or 3 ACH50	.30 CFM50/SF enclosure area of each unit or 3 ACH50

MECHANICAL GENERAL NOTES

1. ALL JOINTS AND SEAMS OF AIR DUCTS SHALL BE SEALED USING TAPES.
2. OUTDOOR AIR INTAKE AND EXHAUSTS SHALL HAVE AUTOMATIC DAMPERS THAT CLOSES WHEN THE VENTILATION SYSTEM IS NOT OPERATING.
3. AN APPROVED PARTY INDEPENDENT FROM THE INSTALLER OF THE INSULATION, SHALL INSPECT THE AIR BARRIER AND INSULATION.
4. DUCT WRAP IN ATTIC SHALL BE INSULATED WITH R-8 2-1/2" THICK FIBERGLASS INSULATION. ALL OTHER DUCTS IN UNCONDITIONED SHALL BE R-6.

POST-CONSTRUCTION DUCT LEAKING TESTING

TOTAL LEAKAGE SHALL BE LESS THEN OR EQUAL TO 4 cfm (113.3 L/min) PER SQUARE FEET (9.29 m2) OF CONDITIONED FLOOR AREA WHEN TESTED AT A PRESSURE OF DIFFERENTIAL OF 0.1 INCHES w.g. (25Pa) ACROSS THE ENTIRE SYSTEM, INCLUDING THE MANUFACTURER'S AIR HANDLER ENCLOSURE. ALL REGISTERS SHALL BE TAPED OR OTHERWISE SEALED DURING TESTING.

BUILDING LEAKAGE TESTING

THE BUILDING OR DWELLING UNIT SHALL BE TESTED AND VERIFIED AS HAVING AN AIR LEAKAGE RATE OF NOT EXCEEDING 5 AIR CHANGES PER HOUR IN CLIMATE ZONES 1 AND 2, AND 3 AIR CHANGES PER HOUR IN CLIMATE ZONES 3 THROUGH 8. TESTING SHALL BE CONDUCTED WITH A BLOWER DOOR AT A PRESSURE OF 0.2 INCHES w.g. (50Pa). WHERE REQUIRED BY THE CODE OFFICIAL, TESTING SHALL BE CONDUCTED BY AN APPROVED THIRD PARTY. A WRITTEN REPORT OF THE RESULTS OF THE TEST SHALL BE SIGNED BY THE PARTY CONDUCTING THE TEST AND PROVIDED TO THE CODE OFFICIAL. TESTING SHALL BE PREFORMED AT ANY TIME AFTER CREATION OF ALL PENETRATIONS OF THE BUILDING THERMAL ENVELOPE.

85% of the lamps are high efficiency

TABLE R402.4.1.1 AIR BARRIER AND INSULATION INSTALLATION

COMPONENT	AIR BARRIER CRITERIA	INSULATION INSTALLATION CRITERIA
General requirements	A continuous air barrier shall be installed in the building envelope. The exterior thermal envelope contains a continuous air barrier. Breaks or joints in the air barrier shall be sealed.	Air-permeable insulation shall not be used as a sealing material.
Ceiling/attic	The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier shall be sealed. Access openings, drop down stairs or knee wall doors to unconditioned attic spaces shall be sealed.	The insulation in any dropped ceiling/soffit shall be aligned with the air barrier.
Walls	The junction of the foundation and sill plate shall be sealed. The junction of the top plate and the top of exterior walls shall be sealed. Knee walls shall be sealed.	Cavities within corners and headers of frame walls shall be insulated by completely filling the cavity with a material having a thermal resistance of *R*-3 per inch minimum. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier.
Windows, skylights and doors	The space between window/door jambs and framing, and skylights and framing shall be sealed.	
Rim joists	Rim joists shall include the air barrier.	Rim joists shall be insulated.
Floors (including above garage and cantilevered floors)	The air barrier shall be installed at any exposed edge of insulation.	Floor framing cavity insulation shall be installed to maintain permanent contact with the underside of subfloor decking, or floor framing cavity insulation shall be permitted to be in contact with the top side of sheathing, or continuous insulation installed on the underside of floor framing and extends from the bottom to the top of all perimeter floor framing members.
Crawl space walls	Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.	Where provided instead of floor insulation, insulation shall be permanently attached to the crawlspace walls.
Shafts, penetrations	Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space shall be sealed.	
Narrow cavities		Batts in narrow cavities shall be cut to fit, or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity space.
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.	
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be sealed to the drywall.	Recessed light fixtures installed in the building thermal envelope shall be air tight and IC rated.
Plumbing and wiring		Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls, or insulation that on installation readily conforms to available space shall extend behind piping and wiring.
Shower/tub on exterior wall	The air barrier installed at exterior walls adjacent to showers and tubs shall separate them from the showers and tubs.	Exterior walls adjacent to showers and tubs shall be insulated.
Electrical/phone box on exterior walls	The air barrier shall be installed behind electrical or communication boxes or air-sealed boxes shall be installed.	
HVAC register boots	HVAC register boots that penetrate building thermal envelope shall be sealed to the subfloor or drywall.	
Concealed sprinklers	When required to be sealed, concealed fire sprinklers shall only be sealed in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids between fire sprinkler cover plates and walls or ceilings.	

R402.1.5 Total UA alternative.

If the total *building thermal envelope* UA (sum of *U*-factor times assembly area) is less than or equal to the total UA resulting from using the *U*-factors in Table R402.1.4 (multiplied by the same assembly area as in the proposed building), the building shall be considered in compliance with Table R402.1.2. The UA calculation shall be done using a method consistent with the ASHRAE *Handbook of Fundamentals* and shall include the thermal bridging effects of framing materials. The SHGC requirements shall be met in addition to UA compliance.

R402.2 Specific insulation requirements (Prescriptive).

In addition to the requirements of Section R402.1, insulation shall meet the specific requirements of Sections R402.2.1 through R402.2.13.

R402.2.1 Ceilings with attic spaces.

Where Section R402.1.2 would require R-38 insulation in the ceiling, installing R-30 over 100 percent of the ceiling area requiring insulation shall be deemed to satisfy the requirement for R-38 wherever the full height of uncompressed R-30 insulation extends over the wall top plate at the eaves. Similarly, where Section R402.1.2 would require R-49 insulation in the ceiling, installing R-38 over 100 percent of the ceiling area requiring insulation shall be deemed to satisfy the requirement for R-49 insulation wherever the full height of uncompressed R-38 insulation extends over the wall top plate at the eaves. This reduction shall not apply to the *U*-factor alternative approach in Section R402.1.4 and the total UA alternative in Section R402.1.5.

R402.2.2 Ceilings without attic spaces.

Where Section R402.1.2 would require insulation levels above R-30 and the design of the roof/ceiling assembly does not allow sufficient space for the required insulation, the minimum required insulation for such roof/ceiling assemblies shall be R-30. This reduction of insulation from the requirements of Section R402.1.2 shall be limited to 500 square feet (46 m²) or 20 percent of the total insulated ceiling area, whichever is less. This reduction shall not apply to the *U*-factor alternative approach in Section R402.1.4 and the total UA alternative in Section R402.1.5.

INSULATION RATEING

WALL = R-20
CEILING = R-49
SEE S-2 — WALL SECTION

R403.3.3 Duct testing (Mandatory). Testing shall be conducted by an *approved* third party. A written report of the result of the test shall be signed by the party conducting the test and provided to the *code official* before issuance of the certificate of occupancy or final inspection. Ducts shall be pressure tested to determine air leakage by one of the following methods:

1. Rough-in test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure if installed at the time of the test. All registers shall be taped or otherwise sealed during the test.
2. Postconstruction test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. Registers shall be taped or otherwise sealed during the test.

Exception:

1. Where the ducts and air handlers are located entirely within the building thermal envelope.

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GOVERNMENT OF THE DISTRICT OF COLUMBIA
PERMIT OPERATIONS DIVISION
PLANS APPROVED
Permit No. B2207022 Date 06/30/23

These plans are conditionally approved as submitted or noted during plan review and are subject to field inspection. Approved plans must be kept on site and are needed for all inspections. No changes or modifications to these plans or changes require a revision permit with the revised plans. Trade Permits are required for trade work. e.g. Electrical or Plumbing

Mechanical Review - Golnaz Bastani - 06-30-2023
Electrical Review - Golnaz Bastani - 06-30-2023
Plumbing Review - Golnaz Bastani - 06-30-2023
DC Water Review - Vahid Bilvardi - 06-30-2023
DOEE SW Review - Lala Seidenspicker - 06-30-2023
Energy Review - Golnaz Bastani - 06-30-2023
Structural Review - Golnaz Bastani - 06-30-2023
Neighbor Notification - Kolas Elion - 06-30-2023
DOEE SE-SW Review - Amanze Williams - 06-30-2023

INCOMPLETE

Project

ALTERATION / ADDITION
515 21st STREET, NE
WASHINGTON DC

No.	Revision/Issue	Date

Consultants

Sunday Ojigbo
(B.S. Arch/ M.S. Planning)
2409 Oxon Run Drive
Temple Hills, Md 20744

Sheet Title

GREEN

Project No.	Sheet
Date	GB-001
Drawn by	
Scale	AS SHOWN