



PROJECT SITE

2 VICINITY MAP
SCALE: NTS

PANEL	C	TYPE	SQUARE D
VOLTAGE	240	MTG	RECESSED
PHASE	1	AKC	10,000
WIRES	3	LARGEST MOTOR	5520 VA
RATING	200 A		
MAIN	BKR		
CKT DESCRIPTION	BKR	CKT	L1 L2 CKT
STOVE	60A2P	1	4800 -- 2
		3	-- 4800 -- 4
OFFICE	20A1P	5	1440 -- 6 20A1P
RECEPTACLES			
OFFICE	20A1P	7	-- 900 8A 15A1P
RECEPTACLES			
			900 -- 8B 15A1P
			9 -- 240 -- 10A 15A1P
			11 -- 240 10B 15A1P
			13 -- 1200 -- 14 20A1P
			15 -- 1800 16 20A1P
			17 1800 -- 18 20A1P
			19 -- 1620 20 20A1P
			21 -- 2760 -- 22 30A2P
			23 -- 2760 24
			25 -- 2760 -- 26 30A2P
			27 -- 2760 28
			29 -- -- 30
TOTAL VOLT-AMPS: 17700 15120			
TOTAL CONNECTED LOAD: 32820 VA 137 AMPS			
TOTAL DEMAND LOAD: 1.25 900			
(1) LIGHTING 21060 10K+5 15530			
(2) RECEPTACLES 11040 1.25+1 12420			
(3) MOTORS 0 0.65 0			
(4) KITCHEN 0 1 0			
(5) CONT. RECEPT 0 1 0			
(6) ELECTRIC HEAT 0 1 0			
(7) WATER HEAT 0 1 0			
TOTALS 32820 28850 120 AMPS			

COUNTY APPLICABLE CODES:

2023 NATIONAL ELECTRICAL CODE
2021 INTERNATIONAL ENERGY CONSERVATION CODE

SCOPE OF WORK:

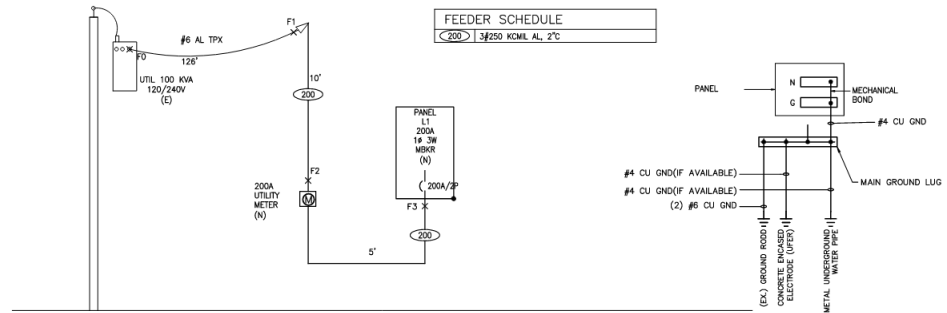
- UPGRADE EXISTING SINGLE PHASE SERVICE TO 200 AMPS, 14.
- ADD NEW RECEPTACLES AND WIRING TO THREE NEW CLASSROOMS

ELECTRICAL LEGEND

x' x"	MOUNTING HEIGHT	⊕	DUPLEX RECEPTACLE
A / AMP	AMPERE	⊕	GFCI DUPLEX RECEPTACLE
CU	COPPER	⊕	JUNCTION BOX
CT	CURRENT TRANSFORMER	⊕	MOTOR STARTER OR CONTACTOR
(E)	EXISTING	⊕	MOTOR
MDP	MAIN DISTRIBUTION PANELBOARD	⊕	FUSED DISCONNECT
(N)	NEW	⊕	UTILITY METER
N	NEUTRAL	⊕	TRANSFORMER
PH	PHASE	⊕	CIRCUIT BREAKER
RTU	ROOF TOP UNIT	⊕	FUSE AND SWITCH
V	VOLT	⊕	PANELBOARD
WG	WEATHERPROOF GFI		

SHORT CIRCUIT CALCULATIONS

FAULT POINT	FAULT LOCATION	FAULT SOURCE POINT	AVAILABLE FAULT CURRENT	CABLE						f	M	Isc	FAULT POINT
				E (VOLTS)	NO. SETS	WIRE SIZE	C VALUE	LENGTH (FT)	Phase				
F0	TRANSFORMER		29,600									29,600	F0
F1	POT	F0	29,600	240	1	#6	1480	126	1PH	21,000	0.045	1,345	F1
F2	METER	F1	1,345	240	1	#250	12122	10	1PH	0.009	0.991	1,333	F2
F3	PANEL "A"	F2	1,333	240	1	#250	12122	5	1PH	0.005	0.995	1,327	F3
C = CABLE CONDUCTANCE FACTOR				Vs = TRANSFORMER SECONDARY LINE TO LINE VOLTAGE									
E = LINE TO LINE VOLTAGE				Z = TRANSFORMER IMPEDANCE									
Vp = TRANSFORMER PRIMARY LINE TO LINE VOLTAGE				L = LENGTH OF CABLE									
				Isc = SHORT CIRCUIT CURRENT									
M = 1/(1+f)				Isc = Vp x M x Isc/Vs									
f = 1.732 x L x Isc / (C x n x E)													



ONE-LINE DIAGRAM

SCALE: NTS

Digitally signed by Thomas Bassler
DN: cn=Thomas Bassler, email=thomas.bassler@gmail.com, c=US
Date: 2023.08.12 21:34:45-0700

THOMAS L. BASSLER, PE
ELECTRICAL ENGINEER
303.942.8093 tom.bassler@gmail.com



SERVICE UPGRADE
2820 NORTH HARRISON STREET
DENVER, CO 80205



9/12/2023

ONE-LINE DIAGRAM,
ELECTRICAL SPECIFICATIONS

DESIGNED BY: TLB
DRAWN BY: TLB
DRAWING NO.
E1.0

R, PE