

GENERAL REQUIREMENTS

TOTAL ELECTRICAL LOAD CALCULATIONS



July 25, 2022

Mr. Vladimir Lyubetsky
DRA Architects
260 Charles Street, Suite 300
Waltham, MA 02453

RE: Northeast Metro Technical High School
Project: 60-20-409

Dear Vladimir,

This is to acknowledge that we sent to WMGL&D a work order application, load letter, and site plan locating their utility feeders, junction boxes, and pad mounted transformers for the new electric service for Northeast Metro Technical High School. They have acknowledged receipt of this information and have also acknowledged that there will be a new service for this project.

Very truly yours,

Dino D. Buro, P.E.

BALA CONSULTING ENGINEERS

[Type text]



Projected Preliminary Electrical Connected Loads

Lighting

(lighting load at 0.81W/sf (energy code X 125% continuous load as per NEC, roughly 365kW, plus site lighting, 100 kW)

492 kW

Receptacles (2 watt / SF)

774 kW

Mechanical:

- Miscellaneous Electric Heat
(Cabinet Htrs/Unit Heaters/Etc.- 30 @5kW) 150 kW
- Heat Recovery Units
Avg 20hp each - 180hp 580 kW
- VRF System
(8) Units @ 115kW each 920 kW
- Roof Top Units
Avg 150A each 996 kW
- Make-up Air Unit 140 kW
- Miscellaneous AC Split Systems
25 at 2 tons each 62 kW
- Exhaust Fans
Majority fractional hp 1/3 – 1/4
Largest 3hp 15 kW
- H + V Condensing Units 700 kW

Plumbing:

- Electric Hot Water Heaters (2 @ 108, 2 @ 90kW each) 396 kW
- Miscellaneous Circ Pumps (Fractional hp) 5 kW
- Miscellaneous Pumps 5 kW
- Air Compressor (1 @ 40hp, 1 @ 20hp, 5 @ 15hp) 135 kW
- Domestic Water Booster Triplex Pump (3 @ 20hp) 60 kW

Elevators (two at 60 hp)

120 kW

Miscellaneous Power

(Appliances, Copiers, Elec Heat Trace,
Art Rm equipment, Field House Equipment, etc.)

100 kW

Kitchen (Gas)

200 kW

Miscellaneous Equipment

45 kW

Total: 5,895kW



6,205kVA

Projected Preliminary Electrical Connected Loads with code applied Demand Factor:

First 1,161kVA at 100%	1,161kVA
------------------------	----------

Plus

Next 5,044kVA at 75%	3,783kVA
----------------------	----------

Demand Total: 4,944kVA

Based on projected connected loads with code applied demand, calculated estimated demand load is 5,946Amps at 480Volts, 3-phase.

Proposed secondary service will be sufficient to serve this calculated ampacity. Utility transformer quantity and size to be determined by Utility Co.

(NOTE, This does not include any PV generation)

Project will be supported by a utility-supplied standby generator that will provide a dedicated emergency service to the building.