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**HINDLEY ELEMENTARY SCHOOL  
DARIEN PUBLIC SCHOOLS**



The original Hindley Elementary School was built in the late 1940's with an addition in 1996.

**ELECTRICAL**

**Service and Distribution Systems:**

The existing Electric service was installed in 1996 when the addition was built. Electric service is from an Eversource pad mounted transformer routed underground via a conduit duct bank and terminates into a CT metering board connected to meter# 89128922. Electric service consists of 120/208 Volt, 800 Amp, 3 Phase, 4 Wire with an 800 Amp main service switch. The main distribution boards are commercial grade and manufactured by General Electric. The main service and distribution equipment is in good condition and is located in the Electrical Room adjacent to Boiler Room in the Basement.



**Main Electric Service and Distribution**

Service and Distribution Systems (continued):

Data obtained from Eversource Utilities showing peak demand loads on the incoming service during the period of August 2017 to July 2018, indicates that a maximum peak demand of 103 kW occurred in February 2018. The capacity of existing service is approximately 288 kW. As per NEC and 2003 IBC the building can use a maximum 80% of the capacity, which equates to 231 kW. Therefore, the approximate available spare capacity is 128 kW remaining.

Currently there are fourteen (14) existing large classrooms and two (2) midsize classrooms that have AC window units. The scope of work in this project includes the addition of window AC units for the following rooms and sizing:

1. Fifteen (15) full size classrooms. AC unit shall be rated approximately 18,800 BTU, 208V, 12 Amps, Single Phase.
2. Four (4) small size offices. AC unit shall be rated approximately 8,000 BTU, 120V, 6 Amps, Single Phase.

The additional new air condition electrical load for the proposed new equipment will be 41kW. Once the new additional electric load is added, there will be approximately 87kW spare capacity still available on the existing service for future load.

The new AC units will be provided by the Owner. The new AC units will be powered from new panelboards that will be dedicated to AC loads. The new branch circuit wiring will be installed in MC cable above hung ceiling and wiremold in all finished areas.



**Proposed Scope of Work:**

The existing Main Distribution Board has an available space to install a new 3 Phase-400 Amp circuit breaker. A new sub-distribution board will be installed in the Basement near the existing Main Distribution Board.

Two 120/208V, 200 Amp, 3 Phase, 4 Wire, 54 Pole panelboards will be installed dedicated for window AC unit. One will be located on the 1<sup>st</sup> floor in a new closet to be built in Vestibule 137 and the other on the 2<sup>nd</sup> floor in Storage Room 227. This will support all the new AC unit installations.

Provide new branch circuits for fifteen (15) large rooms and four (4) small rooms based on the electrical load indicated above.

As discussed, Darien Public Schools would prefer all existing AC units (14 – large classrooms and 2 – midsize classrooms) branch circuit extended to new dedicated AC panelboards. Depending where the panelboards are located it may require 50 percent of the existing circuits to be rewired due to voltage drop.

**Probable Cost:**

1	New 400Amp circuit breaker installed in available space and new sub-distribution board will be installed in the Basement near the existing Main Distribution Board.	\$ 15,000
2	Two 120/208V, 200 Amp, 3 Phase, 4 Wire, 54 Pole panelboards	\$ 30,000
3	Provide new branch circuits for (15) large rooms and (4) small rooms based on the electrical load indicated above.	\$ 40,000
4	Extend existing branch circuit (7 large rooms and 1 midsize rooms)	\$ 10,000
5	Rewired existing branch circuit (7 large rooms and 1 midsize rooms)	<u>\$ 20,000</u>
	<b>Sub-total Cost</b>	<b>\$115,000</b>



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**HOLMES ELEMENTARY SCHOOL  
DARIEN PUBLIC SCHOOLS**



The original Holmes Elementary School was built in 1932, with an addition in 2006.

**ELECTRICAL**

**Service and Distribution Systems:**

The existing Electric service was installed in 1996 when the addition was built. Electric service is from an Eversource pad mounted transformer routed underground via a conduit duct bank and terminates into a CT metering board connected to meter# 06463210. Electrical service consists of 120/208 Volt, 1200 Amp, 3 Phase, 4 Wire with a 1200 Amp main service switch. The main distribution boards are commercial grade and manufactured by Siemens. The main service and distribution equipment is in good condition and is located in the Electrical Room adjacent to Boiler Room in the Basement.



**Main Electric Service and Distribution**

Service and Distribution Systems (continued):

Data obtained from Eversource Utilities showing peak demand loads on the incoming service during the period of August 2017 to July 2018, indicates that a maximum peak demand of 96kW occurred in January 2018. The capacity of existing service is approximately 432 kW. As per NEC and 2003 IBC the building can use a maximum 80% of the capacity, which equates to 346 kW. Therefore, the approximate available spare capacity is 250 kW remaining.

Currently there are sixteen (16) existing large classrooms and three (3) midsize classrooms that have AC window units. The scope of work in this project includes the addition of window AC units for the following rooms and sizing:

1. Nine (9) full size classrooms. AC unit shall be rated approximately 18,800 BTU, 208V, 12 Amps, Single Phase.
2. One (1) medium size rooms. AC unit shall be rated approximately 10,000 BTU, 120V, 8 Amps, Single Phase.
3. Five (5) small size offices. AC unit shall be rated approximately 8,000 BTU, 120V, 6 Amps, Single Phase.

The additional new air condition electrical load for the proposed new equipment will be 27kW. Once the new additional electric load is added, there will be approximately 223 kW spare capacity still available on the existing service for future load.

The new AC units will be provided by the Owner. The new AC units will be powered from new panelboards that will be dedicated to AC loads. The new branch circuit wiring will be installed in MC cable above hung ceiling and wiremold in all finished areas.



**Proposed Scope of Work:**

The existing Main Distribution Board has an available space to install a new 3P-400Amp circuit breaker. A new sub-distribution board will be installed in the Basement near the existing Main Distribution Board.

Two 120/208V, 200 Amp, 3 Phase, 4 Wire, 54 Pole panelboards will be installed dedicated for window AC unit. One will be located on the 1<sup>st</sup> floor in a new closet to be built in Vestibule 137 and the other on the 2<sup>nd</sup> floor in Storage Room 227. This will support all the new AC unit installations.

Provide new branch circuits for 9 large rooms, midsize classroom and 4 small offices based on the electrical load indicated above.

As discussed, Darien Schools would prefer all existing AC units (16 – large classrooms and 3 – midsize classrooms) branch circuit extended to new dedicated AC panelboards. Depending where the panelboards are located it may require 50 percent of the existing circuits to be rewired due to voltage drop.

**Probable Cost:**

1	New 400Amp circuit breaker installed in available space and new sub-distribution board will be installed in the Basement near the existing Main Distribution Board.	\$ 15,000
2	Two 120/208V, 200 Amp, 3 Phase, 4 Wire, 54 Pole panelboards	\$ 30,000
3	Provide new branch circuits for 9 large rooms and 1 midsize room and 5 small rooms based on the electrical load indicated above.	\$ 30,000
4	Extend existing branch circuit (8 large rooms and 2 midsize rooms)	\$ 15,000
5	Rewired existing branch circuit (8 large rooms and 1 midsize rooms)	<u>\$ 25,000</u>
	<b>Sub-total Cost</b>	<b>\$115,000</b>



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**ROYLE ELEMENTARY SCHOOL  
DARIEN PUBLIC SCHOOLS**

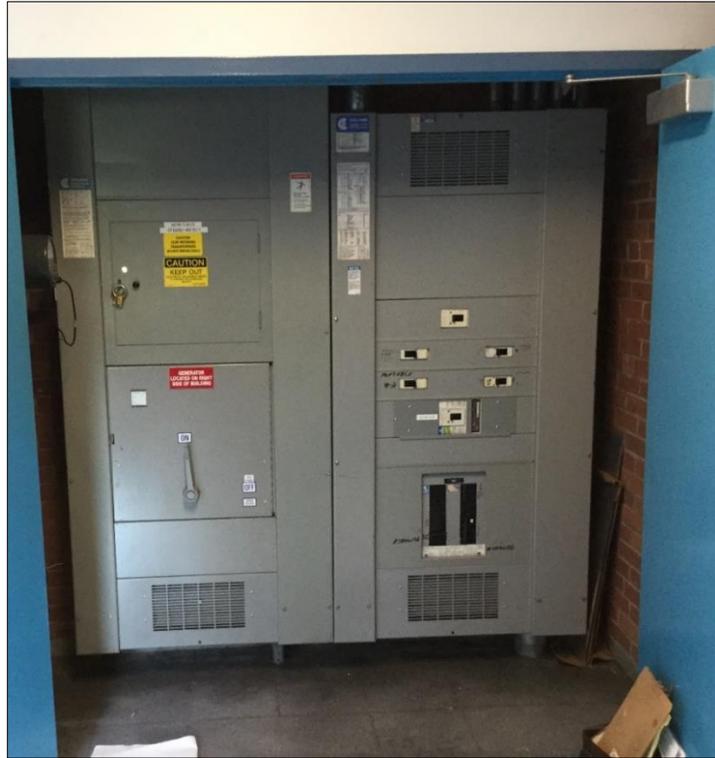


The original Royle Elementary School was built in the early 1950's, with an additions in 1958, 1976 (Library) and 1996.

**ELECTRICAL**

**Service and Distribution Systems:**

The existing Electric service was installed in 1992 when the addition was built. Electric service is from an Eversource pad mounted transformer routed underground via a conduit duct bank and terminates into a CT metering board connected to meter# 89197086. Electric service consists of 120/208 Volt, 800 Amp, 3 Phase, 4 Wire with an 800 Amp main service switch. The main distribution boards are commercial grade and manufactured by Power Master. The main service and distribution equipment is in good condition and is located in the Electrical Closet in the hallway of the 1st floor.



**Main Electric Service and Distribution**

Service and Distribution Systems (continued):

Data obtained from Eversource Utilities showing peak demand loads on the incoming service during the period of August 2017 to July 2018, indicates that a maximum peak demand of 120 kW occurred in July 2018. The capacity of existing service is approximately 288 kW. As per NEC and 2003 IBC the building can use a maximum 80% of the capacity, which equates to 230 kW. Therefore, the approximate available spare capacity is 110 kW remaining.

From our visual inspection, it appears there is available space to support a maximum two (2) 3 Pole, 200 Amp circuit breaker in the main distribution board for future proposed work. This will need to be confirmed by removing the cover. If space is not available, the Main Distribution Board can be tapped, and a weather proof disconnect can be placed outside to serve new sub distribution board. The sub distribution board can be placed either outside or within building.

Currently there are twenty (20) existing large classrooms and four (4) midsize classrooms that have AC window units. The scope of work in this project includes the addition of new window AC units for the following rooms and sizing:

1. Six (6) full size classrooms. AC unit shall be rated approximately 18,800 BTU, 208V, 12Amps, Single Phase.
2. Four (4) medium size rooms. AC unit shall be rated approximately 10,000 BTU, 120V, 8Amps, Single Phase.
3. Two (2) small size offices. AC unit shall be rated approximately 8,000 BTU, 120V, 6Amps, Single Phase.



Service and Distribution Systems (continued):

The additional new air condition electrical load for the proposed new equipment will be 36kW. Once the new additional electric load is added, there will be approximately 74kW spare capacity still available on the existing service for future load.

The new AC units will be provided by the owner. The new AC units will be powered from new panelboards that will be dedicated to AC loads. The new branch circuit wiring will be installed in MC cable above hung ceiling and wiremold in all finished areas.

**Proposed Scope of Work:**

Darien Schools will require to determine if space is available in existing Main Distribution Board as indicated above. If not new the existing Main Distribution Board will be tapped, and a weather proof disconnect will be placed outside to serve new sub-distribution board. The new sub-distribution board to be placed within building in the office across the hall of Main Distribution Board.

Two 120/208V, 200Amp, 3 Phase, 4 Wire, 54 Pole panelboards will be installed dedicated for window AC unit. One will be located on the 1<sup>st</sup> floor and the other on the 2<sup>nd</sup> floor. This will support all the new AC unit installations.

Provide new branch circuits for 6 large classrooms, 4 midsize classrooms and 2 small rooms based on the electrical load indicated above.

As discussed, Darien Schools would prefer all existing AC units (20 – large classrooms and 4 – midsize classrooms) branch circuit extended to new dedicated AC panelboards. Depending where the panelboards are located it may require 50 percent of the existing circuits to be rewired due to voltage drop.

**Probable Cost:**

1	New exterior mounted disconnect tapping MDB and new sub-distribution board installed in a new closet built within office across the hall of Main Distribution Board	\$ 25,000
2	Two 120/208V, 200Amp, 3 Phase, 4 Wire, 54 Pole panelboards	\$ 30,000
3	Provide new branch circuits for 6 large rooms, 4 medium rooms and 2 small rooms based on the electrical load indicated above.	\$ 25,000
4	Extend existing branch circuit (10 large rooms and 2 midsize rooms)	\$ 15,000
5	Rewired existing branch circuit (10 large rooms and 2 midsize rooms)	<u>\$ 30,000</u>
	<b>Sub-total Cost</b>	<b>\$125,000</b>