

Ethan Allen Elementary School

6329 Battersby, Philadelphia, PA 19149



Scope Determination Report For New Addition & Major Renovation

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1.0 Introduction

Ethan Allen School is located at 6329 Battersby Street and serves students from kindergarten to 8th grade. The enrollment for School Year 2017-2018 is 986.

The building was constructed in 1920, has 66,482 square feet, and is 3 stories tall. There is a full basement. The arched entrance and decorative colored terra cotta tile work represents the type of design and detail that is typical of the Art Deco style, exemplified in many of the Philadelphia schools of this era. The Ethan Allen School can be found on the National Historical Register. The front of the building faces Battersby Street and the schoolyard in the rear abuts the Lower Mayfair Recreation Center and Playground which is owned by the City of Philadelphia.

The building consists of a three-story classroom perimeter with a two-story high auditorium off the center lobby. The three-story roof is covered with ceramic granule impregnated, fully adhered rolled asphalt sheet system and the auditorium roof is asphalt shingles.

The original school structure consists of reinforced concrete framing with exterior masonry walls. The facades were constructed with tan brick masonry with decorative elements. The main entrance and secondary main entrance on Battersby Street have decorative Romanesque-style tile arches around door openings.



Photograph 1: Aerial view of Ethan Allen Elementary School

2.0 Background

Ethan Allen School is located at 6329 Battersby Street. The main entrance faces Battersby Street, Robbins Street is on the south side of the property and Levick Street to the north. The building was constructed in 1920, has 66,482 square feet, and is 3 stories tall with a full basement. The arched entrance and decorative colored terra cotta tile work represents the type of design and detail that is typical of the Art Deco style, exemplified in many of the Philadelphia schools

The current facility consists of 986 students with a student capacity of 656. The anticipated enrollment for 2019 is 980. There are three trailers located to the south of the building housing (3) three third grade classrooms. The building also has an auditorium that comes off of the center spine and a cafeteria/gymnasium combo space located in the basement which due to the number of lunch periods is primarily used as a cafeteria and gym, during the warm climates is done outdoors.

The project is expected to include four multi-prime contracts: General Construction, Site Improvements, HVAC Construction, Plumbing Construction and Electrical Construction. The purpose of this report is to establish and verify costs for each of these contracts. Most of the scope of work recommended is due to “deferred maintenance” with building systems exceeding their life expectancy cycles. The scope of work developed for this report is based on information contained within the ongoing “Facility Condition Assessment” and as verified during a tour and survey of the school that included Capital Programs design and construction staff, as well as staff from the School District’s Operations and Maintenance Departments.

3.0 Scope of New Work

Design of a new multi-story addition that will contain (8) classrooms and a gymnasium. The addition should include, student toilets (two/gender for each floor), connecting corridor to the existing building, storage closet per floor, janitor’s closet per floor, an IT Technology closet, an elevator and two stair exits (the elevator and one exit stair needs to access all floors of existing building including basement) an accessible exterior ramp, gym office, gym equipment storage, gym staff restroom (unisex) and Mech/Elect. room. Design must be in compliance with all applicable International, City and Government Agency Codes and Requirements.

Minimum square footage requirements planned for each space is listed below:

Classrooms	8 required	6,800 SF (850 SF each)
Gymnasium	1 required	5,640 SF (94’x60’)
Gym Office	1 required	240 SF (12’x20’)
Gym Storage	1 required	180 SF (12’x15’)
<hr/> Total – Instructional space		12,860 SF
Circulation	approx. 20% of bld’g space	2,000 SF
Exits	2 req’d (shaft-approx. 10’ x 20’)	800 SF
Building Storage	1 req’d	250 SF
Technology closet	1 req’d	100 SF
Janitor’s closet	1 req’d (1 st floor)	20 SF
Elevator shaft	1 req’d	160 SF
Elevator Equip Room	1 req’d	80 SF
Mech/Elect room	1 req’d	120 SF
Student toilets	2 req’d (1/gender 1 st floor)	280 SF
Staff Toilet	1 req’d (unisex at gym)	40 SF
<hr/> Total – Non-Instructional space		3,850 SF

Total Programmed Building Space

16,710 SF

3.1 Environmental Scope

The School District of Philadelphia (SDP) Office of Environmental Management & Services (OEMS) will develop scope of work for remediation services where applicable. Work will involve removal of mold- and asbestos- containing materials prior to any investigation or repair can occur. Environmental scope of work will also include abatement required for other work described hereinafter.

3.2 Existing Building Envelope Scope

A. Roof Replacement

- 1) Remove and replace all existing flat roof, flashing, insulation and coping. Roofing to be 2-ply SBS-modified bitumen.
- 2) Remove and replace existing drains at flat roofs as required.
- 3) At the Auditorium, assess condition of shingle roof, flashing and drains to determine need for replacement or repair. Remove and replace troughs.

B. Façade Remediation and Exterior Improvements

A thorough investigation of the exterior façade should be done to evaluate the entirety of the exterior masonry façade, steel lintels, exterior stairs, railings and decorative elements to determine a full scope of repair. At a minimum the scope will be as listed below.

- 1) Replace all exterior steel doors, frames and hardware to be ADA compliant
- 2) Remove rust from steel security bars @ fire exit stairs and repaint.
- 3) Remove deteriorated steel lintels and install new galvanized steel lintels at windows:
All Sides Basement Level = 100%
Levick St. 1st-3rd Floor = 50%
Rear 1st-3rd Floor = 25%
Battersby St. 1st-3rd Floor = 5%
- 4) Recaulk joint @ aluminum reglets.
- 5) Repoint deteriorated mortar joints at brick masonry, (Approx. 10% on Levick St. & Rear)
- 6) Replace cracked or spalled brick masonry (Approx. 500 s.f.)
- 7) Remove and replace cracked and broken 8" concrete curb at front, (Approx. 80 l.f.)
- 8) Regrout all joints between limestone block tread/risers at exterior stairs (60 risers @ 10ft average length)
- 9) Recaulk headers of windows and doors.
All Sides Doors = 100%
Levick St. Windows = 100%
Rear Windows = 30%
Robbins St. Windows = 33%
Battersby St. Windows = 5%
- 10) Install (2) 8'x4' marker boards on newly installed partition wall both sides (12) walls (48 total)
- 11) Install tack board and marker boards over existing black board, wood trim to remain.
24 l.f.x 4'h of tack board and 16 l.f.x4'h. of marker board per 36 classrooms



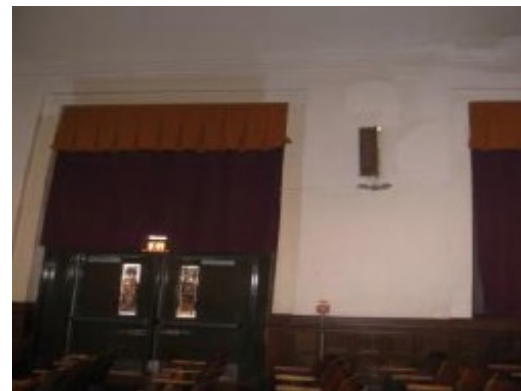
Exterior Doors



Steel Security Bars & Stair Tower



Stone Treads & Risers



Damaged Plaster Walls & Ceilings

3.3 Existing Building Interior Architectural Scope

A. Interior Renovations & Repairs

- 1) Patch, repair and paint damages and cracks in plaster walls at bathroom ceilings and auditorium walls and ceilings throughout. (Approx. 1800 s.f.)

- 2) Fix folding wood partitions between classrooms in place and install new metal stud partition walls and paint both sides, with wood baseboard to match existing baseboard. (12 walls both sides)
- 3) Install an 8' marker board (24 Qty.) and an 8' marker/tack board (24 Qty.) on new wall in each classroom.
- 4) Remove existing water fountains on basement level in each hall (3 Qty.) and install new hydration stations to meet ADA (2 Qty 1 each hall).
- 5) Repair wood flooring approx. 1000 s.f.
- 6) Sand and refinish all wood flooring in classrooms and offices.

Basement Rooms 1-3 and Office:	3000 s.f.
1 st floor Rooms 102-110 and Offices:	8500 s.f.
2 nd floor Room 201 & Rooms 204-208	6800 s.f.
3 rd floor Rooms 302-310 & ESOL	8500 s.f.
- 7) Remove existing VCT/VAT tile floors and carpet and replace with new VCT. Install VCT on concrete floor.

Existing VAT Room 101 (Approx. 1400 s.f.)
Existing VCT Room 301 (Approx. 1120 s.f.)
Existing Carpet Rooms 202-203 (Approx. 2240 s.f.)
Existing Concrete Room 214 (Approx. 1120 s.f.)
- 8) Paint, including interior of closets

Walls: Rooms 1-4, 214, 308-310 and Admin Offices (Approx. 20,000 s.f.)
Walls: Basement Rt Hall above brick wainscot (Approx. 1000 s.f.)
Walls: Auditorium Walls & Stage (Approx. 6500 s.f.)
Ceilings: Boys and Girls Restroom 1 st -3 rd fl. (Approx. 800 s.f.)
- 9) Remove old speakers, telephones and old televisions along with their brackets, (Assume 25 each)
- 10) Remove old Interactive Panel Boards to be replaced by SDP (Assume 25)
- 11) Install cubbies in storage closets in Kindergarten Rms.
- 12) Install new wood entry doors and hardware on classrooms with old doors (Assume 10) and repair interior room wood closet doors (Assume 40)

B. Cafeteria Renovation

The cafeteria has ample size to seat the capacity of students. A double serving line needs to be installed along the north side of the cafeteria. Currently, the serving line is set up in the kitchen, where there is only one exit.

- 1) Install (2) new ADA compliant concrete ramps at cafeteria both sides (28'x5' ramp, 5'-6"x5'-6" landing).
- 2) Remove basketball hoops and hardware and patch, repair and paint damages.
- 3) Remove existing VAT & VCT flooring in cafeteria. Grind existing concrete floor and polish.
- 4) Paint walls above brick wainscot & ceilings (Approx. 4000 s.f.). Scrape loose paint on ceilings, (Approx. 80 SF) patch and repair.
- 5) Install hand washing sink.
- 6) Replace water fountain with new ada fountain.
- 7) Serving line equipment shall consist as the following:
 - a. (2) Milk Cabinets
 - b. (2) Hot Food Serving Counters
 - c. (4) Cold Food Serving Counters

- d. (2) Cashier Counter & Registers
- e. (2) Condiment Counters
- 8) Duplex and Data Outlet for each cash register.



Cafeteria /Gym

C. Kitchen Renovation

The existing kitchen currently performs as a limited service kitchen. There is no Ansul system, ventilation system or air conditioning system. There are existing exhaust hoods that are not operable. Provide a full service kitchen with dry and wet storage and an office space.

- 1) Remove existing exhaust hoods (2). Existing duct to remain.
- 2) Remove existing 3 compartment sink to be relocated. Cut and cap drain lines for reuse as required.
- 3) Provide a second, ADA compliant, exit door (3'-0"x6'-8" steel door and hardware) along west wall.
- 4) Remove chain-link fence at CMU half wall and install CMU block up to ceiling (approx. 105 SF)
- 5) Clean and polish existing concrete floors.
- 6) Clean existing polished concrete walls.
- 7) Remove any chipped paint at walls and ceilings, patch and repair walls and ceilings and paint with Sanifiber Wall System paint.
- 8) Install dividing metal stud and drywall partition wall and (2) 3'-0"x6'-8" aluminum doors and frame in the existing partition wall at storage room adjacent to kitchen for dry storage and office.
- 9) Install Walk-In-Freezer
- 10) Kitchen equipment shall consist of but not limited to:
 - a. Utility Carts (4)
 - b. Food Processor
 - c. Preparation Table w/Sink (1)
 - d. Preparation Table w/ Double Sink (1)
 - e. Hand Sinks per code
 - f. Work Tables with Can Opener (3)
 - g. 40 Gal. Braising Pan
 - h. Vulcan 4 Burner Gas Range w/ Oven
 - i. Blodgett Double Convection Oven
 - j. Groen Double Convection Steamer
 - k. Hobart Automatic Slicer

- l. Overhead Ventilation System with Heat Sensor
- m. Manitowoc Ice Maker
- n. Garbage Disposer
- o. Hose Reel w/ Control Panel
- p. Champion Pot & Pan Washer
- q. 1200 CFM Exhaust Fan System
- r. Pot & Pan Rack (2)



Kitchen Existing Exhaust



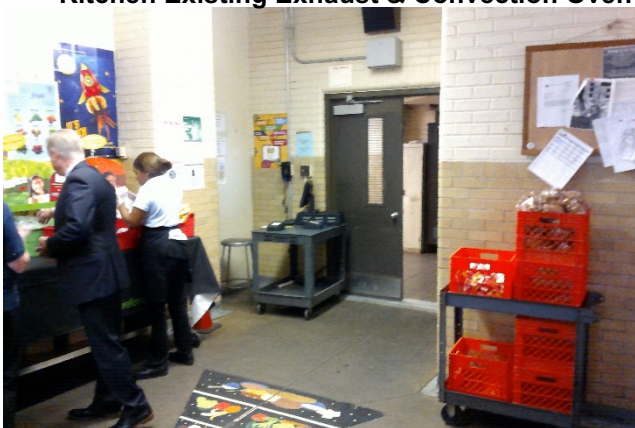
Kitchen Sink Area



Kitchen Existing Exhaust & Convection Oven



Kitchen Refrigerator



Kitchen Entrance and Serving Area

3.4 Mechanical Scope

A. Convection Heating Units

Radiator and convectors: Have limited control and the traps have to a large extent failed. Numerous radiators are without covers or guards.

- 1) Recommendation: Replace all steam traps throughout the building. Add manual control valves to terminal radiation in all classrooms and occupied spaces. Provide NO thermostatic control. Provide expanded metal wire guards over each radiator not currently equipped.

Classroom Radiation Equipment Schedule			
Room #	No.	Radiator Type	Remarks
Basement			
1	2	FT/CI	CI Ceiling Mounted
2	1	ST	
3	1	CI	
4	2	FT/CI	CI Ceiling Mounted
First Floor			
101	1	CI	
102	1	CI	No Cover
103	1	CI	No Cover
104	1	CI	No Cover
105	1	CI	No Cover
106	1	CI	No Cover
107	1	CI	
108	2	CI/ST	
109	1	CI	
110	2	CI/ST	
Second Floor			
201	2	CI	
202	1	ST	
203 No Access			
204	1	CI	No Cover
205	1	CI/ST	
207	1	CI	No Cover
208	1	CI	
209	1	CI	No Cover
210	1	CI	No Cover
Third Floor			
301	2	CI	No Cover
302	1	CI	No Cover
Unassigned Room	1	ST	
303	2	CI	No Cover

304	1	CI	No Cover
305	1	CI	No Cover
306	1	CI	No Cover
307	1	CI	No Cover
308	1	CI	No Cover
309	1	CI	No Cover
310	2	CI	No Cover

CI = cast iron radiator, FT = flat top radiation enclosure, ST = sloped top radiation enclosure

B. Integrated Automation

Controls: Existing controls are a pneumatic based system that is largely inoperative. Installation of manual valves on terminal equipment is recommended above. Consider installation of time clock system for boiler operation.

3.5 Electrical Scope

A. Electrical Service and Distribution

The existing site Electrical Service comes from medium voltage overhead lines on wooden poles along Battersby St. Two pole-mounted power transformers (Scott connection) with medium voltage primary (Voltage level unknown at this time) and 120/240VAC secondary and at an estimated available power of 150KVA are installed for supplying power to facility.

The service entrance to the facility consists of a disconnect switch and utility meter located in a closet in the gymnasium. The main distribution panel is located in building engineer's office in the basement. The main distribution panel has not been upgraded and its size is 400A.

Power distribution system is accomplished with two different voltages. The 240/120-volt system is fed through corridor located lighting/receptacle panel boards, two on each floor, flush mounted. There are two phase converter transformers (75KVA & 37KVA) for converting 240VAC to 120/208VAC and three phase units for powering boilers, kitchen, AC units, and other 208-volts required loads. It appears that panel boards with their respective branch circuit breakers have out-lived their useful lives and are ready for upgrade/replacement.

Recommendation:

- 1) Provide a new electrical service rated at 1200A, 480/277, 3PH, 4 wire main distribution panel in the new building addition. Provide an outdoor PECO pad mounted transformer for the new building electrical service. Provide one 225KVA, 480V to 120/208V step down transformer and 800A low voltage distribution panel for powering the kitchen equipment's, lighting/receptacle panels and other 208volts loads throughout the new building addition. Provide a receptacle distribution panel per floor and a lighting panel for the new building addition.
- 2) If providing two separate electrical services is not permitted per code or authority having jurisdiction then provide feeders from new electrical service to re-energize the existing building service. The phase converter is estimated to be 225KVA.
- 3) Retrofit the existing electrical panels with new circuit breakers and reconnect the feeders and branch circuits. The estimate should include 16 existing panels to be retrofitted.
- 4) Modernize classroom with sufficient power receptacles per school district classroom minimum receptacle layout.

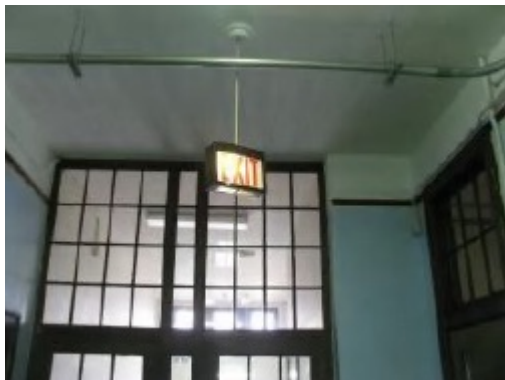
- 5) Replace the open bus panels in Building Engineer's office with new panel and circuit breakers.
- 6) Provide electrical connections to architectural and mechanical modifications in this report.

B. Lighting

The existing building interior lighting system has mostly T12 fluorescent lights. The gym and cafeteria have high intensity discharge lights. The exterior lighting is a mixture of LED's and HID's. The exit signs are incandescent type.

Recommendation:

- 1) Replace all incandescent exit signs with white thermoplastic LED exit signs and connect to generator source.
- 2) Replace lighting fixtures with new LED lighting fixtures throughout the existing building and provide occupancy sensors in classrooms and offices to comply with energy code. Provide timeclock for hallways, stairs, and exterior lights. Provide generator power to sufficient number of lights in egress path to provide illumination as required by code.
- 3) Replace the exterior HID's with LED's equipped with integral photocells.
- 4) Provide new LED's in new addition with dimmer controls in classrooms.



Exit Signs



Insufficient Classroom Receptacles & Data

C. Fire Alarm System

The existing fire alarm system is antiquated and should be replaced with a new horn and strobe system under current NPFA edition.

Recommendation:

- 1) Remove existing fire alarm system completely including fire alarm control panel, pull stations, bells, fire alarm wiring and power wiring to fire alarm control panel. The demolition of existing fire alarm system shall start after the acceptance and certification of the new fire alarm system.
- 2) Provide new addressable fire alarm system including control panel, remote power booster panels, pull stations, horn/strobes units, smoke detectors, duct detectors, heat detectors, fire alarm

wiring, power wiring, remote annunciator panels, etc. The new system shall come with 3 years of warranty, maintenance service and re-certification.

- Provide pull stations in high ceiling areas like auditorium and gymnasium in lieu of smoke or heat detectors on high ceiling.
- Provide pull stations in Main Office, Building Engineer's Office and Boiler Room. The new pull stations shall include a high impact cover with local alarm by battery.
- Where heat, smoke or duct detectors are installed in areas that are not readily accessible such as high ceiling, provide remote test switches at location readily accessible to faculty only.
- Provide (3) remote annunciators; one at main entrance; and one in building engineer office

D. Security System

The existing quantity of cameras is insufficient and estimated at about 12 cameras in the entire school. The camera system is analog and is antiquated.

Recommendation:

- 1) Provide a new IP camera system at the school.
- 2) Basis of design shall be PELCO.
- 3) Security system specification shall include at minimum 3 manufacturers.

E. Telecommunication System

The existing classrooms only have 2 CAT5E jacks in a single gang box. Wireless access points were installed in classrooms.

Recommendation:

- 1) Provide telecommunication upgrades including CAT 6 connections in existing classrooms based on school district classroom minimum layout.
- 2) Provide 3 CAT6 connections at each new workstation.
- 3) Construction documents and specifications shall adhere to school IT design guideline and specifications.
- 4) The contractor shall be responsible for installation of conduits, cables, patch panels, racks and including all terminations and labeling.
- 5) The design consultant shall provide floor plans, riser and specifications.
- 6) Classroom phones connections to stay.

F. Synchronized Clock System

The existing clocks are battery operated and are not synchronized.

Recommendation:

- 1) Provide a new wireless clock system at 900MHZ.
- 2) The individual clocks shall be battery operated.
- 3) New wireless clocks shall be installed in classrooms, gym, cafeteria, main office, and conference rooms.
- 4) The design consultant shall provide floor plans, riser and specifications.

G. Public Announcement and Bell System

The existing public announcement and bell system is operational.

Recommendation:

- 1) Construction document shall illustrate where the space is architecturally altered and require the PA speakers to be removed and reinstalled to allow for that modification.
- 2) Provide new PA speaker system in the new addition and connect to existing PA system.
- 3) The design consultant shall provide floor plans, riser and specifications.

H. Existing Generator System

The existing natural gas generator is a 15KW Generac and is operational.

3.6 Site Improvements Scope



A. Site Observations

Currently the school is directly adjacent to the Lower Mayfair Rec Center, which is a Philadelphia Parks and Recreation property. The school property is elevated approximately 8 feet above the Rec Center and separated via a low fence with gates. There are four stair ways that connect the

properties. The school often uses the Rec Center for gym classes, however this has presented several safety issues to the school. The principal and building engineer expressed serious concern about the use of the Rec Center for gym classes, because there is no control over who from the general public can use the facility. They informed Capital Programs staff that there have been issues with violence, drugs, and illicit activity at the Rec Center. The building engineer stated that there is a need for improved fencing and gates, especially in the rear of the school parking area, where the general public often park during off hours to access the park. The principal requested exterior recreation amenities at the school site to provide an area for gym and recess in lieu of using the Rec Center.

The existing parking area pavement is degraded and in need of upgrades. Dumpsters are placed in the rear of the parking area and are not located within an enclosure. Fuel tanks are located in the rear yard to the southeast of the building. The remaining schoolyard asphalt pavement is in good condition with minor surface cracking observed throughout. There are currently no play amenities at the site. An existing wrought iron fence borders Robbins and Battersby Streets. A 4' steel or aluminum capped picket fence divides the Mayfair Rec Center. A chain link fence and gate divide the parking area from the rest of the play area. The building engineer reports that during off hours, the general public is trespassing through the parking gates in order to access the rear portion of the Mayfair Rec Center. He has also found large quantities of drugs on the schoolyard following weekend activities, which he attributes to the lack of secure fencing surrounding the school. 3 modular trailers are located on the western side of the site.

B. Recommended Scope

1) Demolition

- Demolish modular buildings and associated concrete foundations (6000 sf).
- Disconnect and cap active utilities here.
- Install E&S Measures for site
- Remove chain link fence in front and 12" concrete curb below fence, (Approx. 300 l.f.)

2) Site Preparation to Accommodate New Addition

- Excavation, earthwork and grading for new foundation of addition (assume 12,000 sf footprint)
- New foundation for addition (see architectural/structural scope for assumptions) (assume 12,000 sf footprint)
- Utility connections and new lines to/from street – sewer, gas, electric
- Utility connections from ex. building to new addition – water

3) Pavement & Concrete

- Pavement restoration at modular demolition footprint (assume 6000 sf asphalt – 1 ½" wearing course, 3" binder, 6" 2a stone).
- Mill and overlay of parking area – 1" depth (29,000 sf) with associated parking striping
- New dumpster pad (200 sf concrete, 8" slab, reinforced with galvanized wire mesh)
- Replace damaged concrete walkway along Battersby St. (Approx. 1000 s.f.)
- Install new concrete ADA compliant ramp at front entrance.

4) Stormwater Management Allowance

- Subsurface storage system beneath pavement @ 2000 sf footprint with the following assumptions: Pavement demo/removal (2200 sf), 4' depth soil excavation at footprint (haul offsite), 185 cy clean washed stone bed (AASHTO #57) wrapped in geotextile, 1' OD Perforated PVC Pipe (900 lf), new 4' highway grate inlets (2 total), DIP conveyance piping (assume 150 lf), 1 cleanout, 1 monitoring well, full depth asphalt restoration on top of footprint (2000 sf), and overflow connection allowance back to street sewer.

5) New Handrails, Front Entry Stair

- Anodized aluminum, black powder coat, top, middle, bottom rails (30 lf)

6) Play Amenities

- New gooseneck basketball hoops (2 total)

8) Landscaping Improvements

- Perennial groundcovers (50 #1 containers) along front grass areas