

ALAN ENGINEERING, L.L.C.

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October 17, 2013

Paul Starratt, P.E.
Town Engineer
28 North Street
Westford, MA 01886

Re: Cost Estimate for Student Safety Improvements
Millennium Building

Dear Mr. Starratt:

I apologize for the delay in providing you with this estimated budget for the improvements to the student drop-off area at the Millennium Building.

To summarize, the student access way to the Millennium Building is located in an area that is heavily congested with both vehicular and pedestrian traffic. The area offers no clearly defined pedestrian walkways, no separation between vehicle and pedestrian traffic, and significant conflicts between thru traffic vehicles, parked vehicles, and standing (drop-off) vehicles. The purpose of the project is to eliminate these conflicts by providing clearly defined pedestrian ways that are appropriately separated from vehicular travel ways, and to eliminating the conflicts that exist between the various types of vehicular movements on the site.

The main feature of the project would be to add a student drop-off area. The area would isolate the drop-off vehicles from the thru traffic and parking areas. This would allow several vehicles to drop off students at the same time, and define a traffic pattern that would allow the drop-off vehicles to easily transition into the thru traffic area. The drop-off location would provide safe direct access to the western entrance of the Millennium Building. Additionally, a raised crosswalk would be added for traffic calming and better definition of pedestrian access ways. Additional sidewalks would also be added to separate pedestrian and vehicular traffic.

Since the project is located at the lowest corner of the parking lot, the drainage needs to be appropriately managed in accordance with current Storm Water Management Standards. The existing drainage system does not adequately collect, treat, or convey storm runoff. Excessive ponding is a nuisance to employees and students; persistent erosion of the gravel access road behind the Millennium Building has resulted in continuous maintenance issues and has caused an alteration of drainage patterns that is beginning to affect adjacent properties; and the quality of storm water being discharged to off-site wetland resource areas is not being managed in accordance with current standards.

The drainage improvements would include adding some catch basins and piping to collect and convey runoff to storm water treatment areas. Add rain gardens to treat storm water. And to add a water quality channel to direct runoff to appropriately locations.

The following is an estimated line-item budget for the project. Please note that this budget is an estimate based on a conceptual design. Actual figures will vary depending on the final design. A 15 percent contingency has been added for unforeseen costs to the project.

Site preparation: \$ 9,000

- install construction barriers and erosion control barriers \$ 4,000
- remove and dispose of existing features not included in the design \$ 2,000
- strip and stockpile existing area, remove and dispose of asphalt, etc. \$ 3,000

Site improvements: \$39,000

- Site grading, relocate gravel access road, gravel base for drop-off area \$ 5,000
- Pavement for sidewalks, drop off area, and overlay disturbed areas \$ 30,000
- Guardrails, handrails, signs, traffic stripping \$ 3,000
- Landscaping – loam & seed, trees, etc. \$ 2,000

Drainage improvements: \$16,000

- Catch basins, piping, and culverts \$ 8,000
- Grass channel, riprap \$ 2,000
- Rain Gardens, including piping and plantings \$ 4,000
- Replace existing culverts \$ 2,000

Estimated Budget	\$ 64,000
Contingency (15%)	\$ 9,600
TOTAL ESTIMATED BUDGET	\$ 73,600

Please feel free to contact me with any questions or comments.

Sincerely,
ALAN ENGINEERING, L.L.C.



Mark A. Sleger, P.E.
Manager