



TOWN OF HANOVER
550 HANOVER STREET
HANOVER, MASSACHUSETTS 02339

Advisory Committee

Hanover Advisory Committee

550 Hanover Street

Hanover, MA 02339

Meeting Minutes

Tuesday, November 13, 2018 – 7:00 pm

Advisory Committee Hearing Room

Hanover Town Hall

Committee Attendees

Sandra Hayes

Joan Port-Farwell

Steven Freedman

Jerry O'Hearn

Steven Kmito

Nick Morwood

Gavin Little-Gill

Absent

Ted Hickey

James Hoyes

Other Attendees

Lincoln Heineman, Finance Director

Virginia Johnson, Library Director

Jeanne Cianciola, Chair of Library Trustees

Elaine Shea, Library Trustee

Emily Blampied, Library Trustee

Robert Murray, Facilities Engineering Manager

Alan Peterson, Deputy Superintendent for Facilities

Tom Raab, School Business Manager

Michael Oates, Cedar School Principal

Chelsea Stevens, Town Accountant

Opening

The meeting was opened at 7:00 p.m. by Vice Chair, Sandra Hayes.

Review of Capital Requests – John Curtis Free Library

Virginia Johnson, Library Director, presented the Library's Capital Request for FY20 (attached). The Library is requesting an event sign.

Review of Capital Requests – Facilities Department

Robert Murray, Facilities Engineering Manager, presented Facilities' FY20 Capital Requests (attached). There was additional discussion regarding the Cedar School bathroom renovations and any other unbudgeted facility expenses for Cedar or other facilities related to the Center School Project. Robert said there should be no other expenses. He also gave the Committee an update on some outstanding capital projects:

Senior Center Generator- Broke ground last week, hoping to have generator fully installed soon.

Cedar Playground- Settled on equipment, going out to State Contract to purchase.

Security Cameras- Should be completed in two months

Town Hall HVAC- Has gone out to bid twice, bids have come in over budget. Will be going out to bid again.

Streetlight Purchase- All grant funding sources came through, which will result in the project coming in under budget.

Upgrade Town Hall HVAC- This is to upgrade the HVAC in the back section of Town Hall. This is a work in progress.

Stetson Barn Wall- Work in progress. Water needs to be shifted away from the foundation wall.

Cedar School Roof- In the immediate future, the roof will need to be patched. But it may need to be replaced entirely at some point. MSBA could potentially reimburse us for half of the roof replacement.

Town Hall Hearing Room- Plan to wrap up this project ASAP.

Energy Management Controls- Receiving proposals soon.

Adjournment

Steven Kmito made the motion to adjourn. This was seconded by Joan Port-Farwell. All were in favor and the meeting adjourned at 8:58 p.m.



Capital Improvements

PROJECT DETAIL SHEET

Fiscal Year: 2020

Department: Facilities Department

Project Title: Library Signage

Requested Amount: \$ 10,000



Description: Currently, the John Curtis Library utilizes a portable sidewalk letterboard to advertise library events to passing traffic. The letterboard is small, falls over in wind, and is often not useable during the winter. The Library Trustees are requesting a permanent solution.

This proposal involves design and necessary approvals for the purchase and installation of a permanent new sign (non-electronic) located near the front sidewalk with means to communicate library events utilizing changeable letters. The Library name and address would also be permanently affixed.

Project Overview: Using professional services, design, procure and install an exterior sign appropriate for display within the Historic District and suitable with the Library architecture, and with full review and approval of the Library Trustees. Provide appropriate landscaping for the sign to suit the site.

Financial impact of this project on the department's operating budget: Negligible. The project will require minor, but non-budgetary changes in site maintenance for mowing and mulching. Lettering for the sign will be provided with the capital project, so no impact is foreseen there. However, the positive impact of the sign would be more frequent and more successful promotion of Library events, with more widespread recognition by passing motorist and pedestrian traffic, resulting in greater success of Library functions.



Capital Improvements

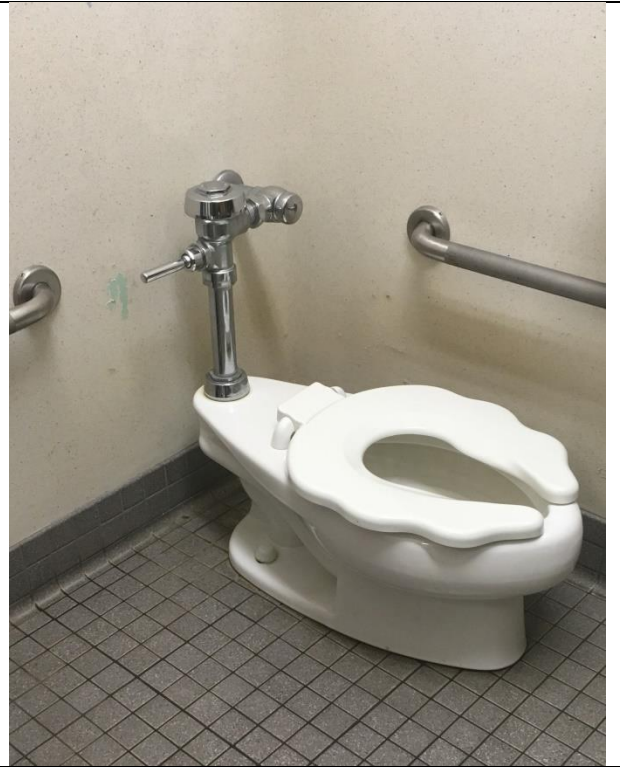
PROJECT DETAIL SHEET

Fiscal Year: 2020

Department: Facilities Department

Project Title: Prepare Cedar School for PreK and K Student population

Requested Amount: \$ 130,000.00



Description: In accordance with Hanover School District's new re-districting plan, for the school year beginning September 2019, Cedar Elementary School will become a school strictly for all Pre-K, K and First Grade level students in Hanover Public Schools. To accommodate this age group of students, bathroom fixtures will require changes to meet plumbing and educational codes. These changes involve replacement of toilets with new toilets appropriately sized for Pre-K students as well as lowering the heights of other toilets and sinks to age-appropriate heights. This work will necessitate opening up walls and cutting drainpipes to install the required mounting brackets (carriers) for toilets. In addition, 3 bathrooms in the C-wing, which had previously been decommissioned and converted to storage rooms, and 1 additional bathroom that had been converted to an adult bathroom must now be restored to bathrooms for K-level students.

Project Overview: Referring to attached sketch, this project will involve various alterations to the bathrooms in the 3 wings of the school (to be named the Pre-K, K and First Grade wings).

1. In the Pre-K wing, the existing bathrooms located outside the Gym entrance must be converted to Pre-K Girls and Boys bathrooms, requiring replacement of the 5 existing toilets with new Pre-K size toilets and the lowering of 4 sinks from 30 inch height to 23 inches. A changing table must also be installed in the Girls bathroom.
2. Alterations in the K-wing involve 2 bathroom areas, as follows:
 - a. At the Girls and Boys gang bathrooms behind the Cafeteria: Modify fixtures to accommodate K-level students. Lower heights of 4 sinks from 30.5 to 24 inches and lower heights of 3 toilets from 15 to 12 inches.

- b. At Classrooms 28/28A and 29/29A, there are 4 small rooms at the rear of the classrooms (along the corridor) that were originally constructed as single user student bathrooms. These 4 bathrooms were subsequently altered and repurposed: three of them were converted to storage rooms (after stripping out the toilets and sinks, capping their piping, and sealing the floor drains) and one was converted to an adult bathroom. All four of these rooms must now be restored to bathrooms for the K-level students (meeting current Code requirements), requiring the installation of one sink and one toilet in each of 3 rooms (with related plumbing work) and modifying the sink and toilet in the 4th room to K-level fixtures. Associated work, including re-installation of doors and lighting improvements, is also required.
3. Alterations in the First Grade wing consist of changing and/or modifying a total of 6 toilets and 6 sinks in the Boys and Girls gang bathrooms to provide fixtures at the appropriate height for first grade students.

In preparation of this proposal, the Facilities Department obtained a quote (attached) from R.W. Irvine, the Department's plumbing services contractor, which priced the work for the bathroom fixture alterations at \$105,136. This did not include associated selective demolition, wall repairs and other incidental costs. The Department also believes that the project must be reviewed and detailed by a professional architectural firm to verify and modify as appropriate the proposed alterations. Considering these anticipated expenses, the Department established a requested project appropriation of \$130,000.

Financial impact of this project on the department's operating budget: Re-establishment of 3 previously decommissioned bathrooms will result in a slight increase in supplies for custodial paper products and cleaning materials. Otherwise, there will be no budget impact.

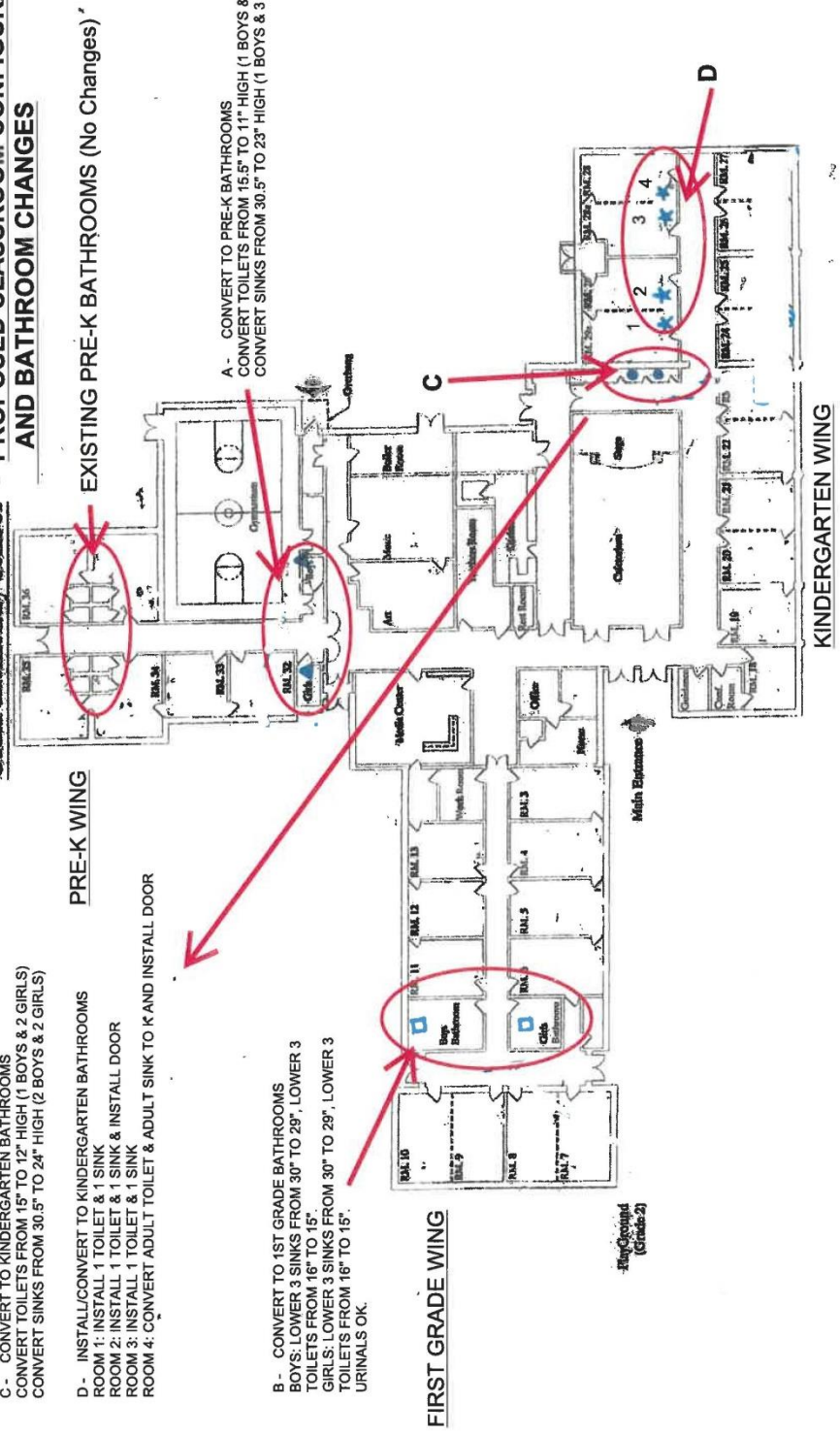
Cedar Elementary School - PROPOSED CLASSROOM CONFIGURATION AND BATHROOM CHANGES

C - CONVERT TO KINDERGARTEN BATHROOMS
 CONVERT TOILETS FROM 15" TO 12" HIGH (1 BOYS & 2 GIRLS)
 CONVERT SINKS FROM 30.5" TO 24" HIGH (2 BOYS & 2 GIRLS)

D - INSTALL/CONVERT TO KINDERGARTEN BATHROOMS
 ROOM 1: INSTALL 1 TOILET & 1 SINK
 ROOM 2: INSTALL 1 TOILET & 1 SINK & INSTALL DOOR
 ROOM 3: INSTALL 1 TOILET & 1 SINK
 ROOM 4: CONVERT ADULT TOILET & ADULT SINK TO K AND INSTALL DOOR

B - CONVERT TO 1ST GRADE BATHROOMS
 BOYS: LOWER 3 SINKS FROM 30" TO 29", LOWER 3 TOILETS FROM 16" TO 15"
 GIRLS: LOWER 3 SINKS FROM 30" TO 29", LOWER 3 TOILETS FROM 16" TO 15".
 URINALS OK.

A - CONVERT TO PRE-K BATHROOMS
 CONVERT TOILETS FROM 15.5" TO 11" HIGH (1 BOYS & 4 GIRLS)
 CONVERT SINKS FROM 30.5" TO 23" HIGH (1 BOYS & 3 GIRLS)



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147 Blossom Street
Lynn, Ma. 01902
Tel. (781) 581-0464 x 226
Fax (781) 581-2860
bmcconnell@irvineandsons.com

Robert W. Irvine & Sons Inc.

Proposal

November 8, 2018

Town of Hanover
Cedar Elementary School.

ATT: Alan Peterson
RE: Fixture Replacement

Dear Alan:

This is our proposal to provide labor & material, and some fixtures. I broke it down into three areas.

- **Kindergarten;** Re-pipe waste and water lines and provide new fixtures and faucets for four bathrooms each consisting of 1 toilet, 1 lav and 1 floor drain.
- **Gym;** Remove existing 6 toilets and 4 lavs. lower toilet and lav carriers and reinstall existing fixtures.
- **First grade;** Remove existing 6 toilets, 6 lavs and 3 urinals. lower toilet and lav carriers and reinstall existing fixtures.

This quote does not include ant cutting, patching or painting of any walls or floors.

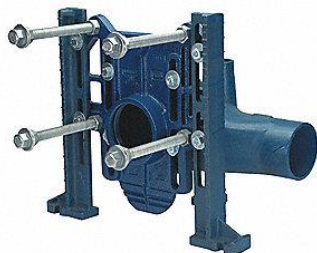
Total \$ 105,136.00

Respectfully,

Bob McConnell

Bob McConnell
General Foreman
Robert W. Irvine & Sons

The Plumber Protects the Health of the Nation



Example: Wall Carrier for 'water closet' [wall hung toilet]



Capital Improvements

PROJECT DETAIL SHEET

Fiscal Year: 2020

Department: Facilities Department

Project Title: Cedar School, Security Upgrades at Main Entrance

Requested Amount: \$ 300,000 approximated*

***Facilities Department has contracted Habeeb & Associates Architects to provide a more specific cost estimate which is expected to be received imminently.**



Description: This appropriation has been requested by the Hanover School Committee out of concern for the current security condition of Cedar Elementary School.

The configuration of the main entrance to Cedar School fails to meet today's recognized requirements for heightened school security via control of the public entering the building. Currently, the entrance area cannot be directly viewed by the office staff except via camera. Visitors cannot be identified and screened until after they enter the building and then choose to approach the office by walking down the left hall. Presently, after a visitor is buzzed into the building, prior to presenting their identification to anyone, there is nothing to restrain the visitor from walking straight down a classroom corridor or straight into the cafeteria. The purpose of this proposal is to create a secure vestibule at the building entrance whereby visitors can be safely identified and cleared, via instantaneous CORI background check, before being admitted into the building; and once in the building are immediately within the vicinity of office personnel who can properly direct them to the appropriate location.

Referring to attached drawing, this project will create a new secure vestibule at the entrance with a new bullet-resistant wall and transaction window (level 4), along with camera, security and intercom upgrades for controlled access through the main entrance. To achieve this, the Principal's office and the school office will be juxtaposed, such that the school office will occupy the office presently occupied by the Principal. The glass curtain wall that currently separates the new school office from the outside entrance area will be replaced with a solid wall into which is installed the new transaction window. To create the vestibule, a new "storefront" wall/door system will be constructed

approximately 8 feet outside the existing door storefront, which will also be upgraded with security glass.

Several associated improvements will also be made in the school interior. The two involved offices will be modified for their new usage. Alterations needed in the new office of the Principal include removal of the center island configuration, modification of the window wall system along the corridor (for privacy) and changes to interior finishes. The antiquated intercom and paging system will also need to be relocated to the new school office and it is recommended that it be replaced at the same time.

In the new school office, the wall along the corridor will be opened to create a reception counter between the office and the lobby, allowing office staff to immediately interact directly with visitors as they enter the building.

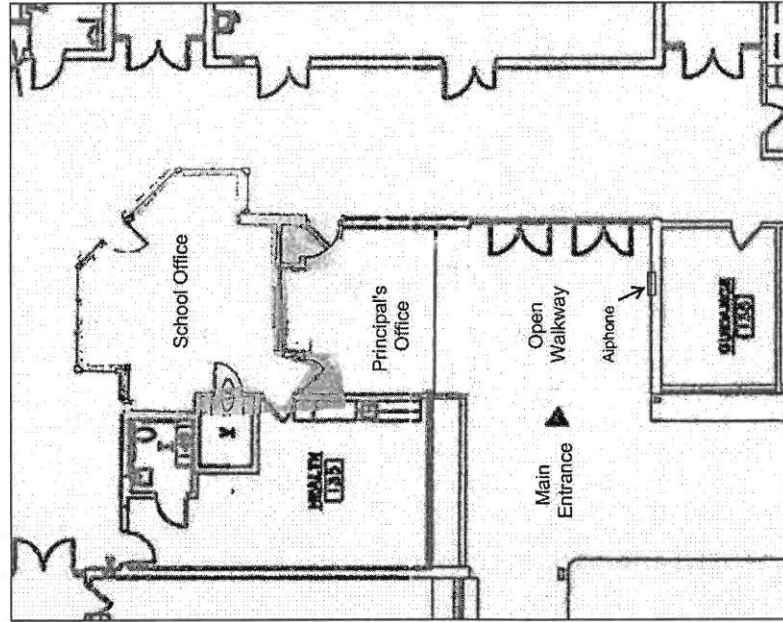
It is also proposed to relocate the cross-corridor doors located at the right end of the lobby to a location closer into the lobby and equip these doors with electronic door hardware permitting rapid closure in event of a lockdown. The current location of the cross-corridor doors is situated beyond the doors to several rooms, while the new door location lies between the lobby and all of the rooms along the corridor.

Project Overview: Contract with a professional design firm to detail the new layout and improvements and prepare contract documents for a construction bid. Design will cover structural changes, all systems upgrades, finishes and furnishings. The high security entry and office area of the new Center School entrance area will be used as a ‘standard’ with site-specific modifications to suit Cedar School. Secure internet accessible systems should be the same as Center School for security and camera monitoring. Systems must be the same operating platforms utilized in the rest of the District. Lockdown for corridors and access control will be expandable to suit budget and allow future growth. Following the chapter 149 procurement, a construction contract will be awarded to the lowest responsible and eligible bidder. Construction during summer 2019 is highly desired, although the necessary process of design and procurement could potentially delay construction until summer 2020.

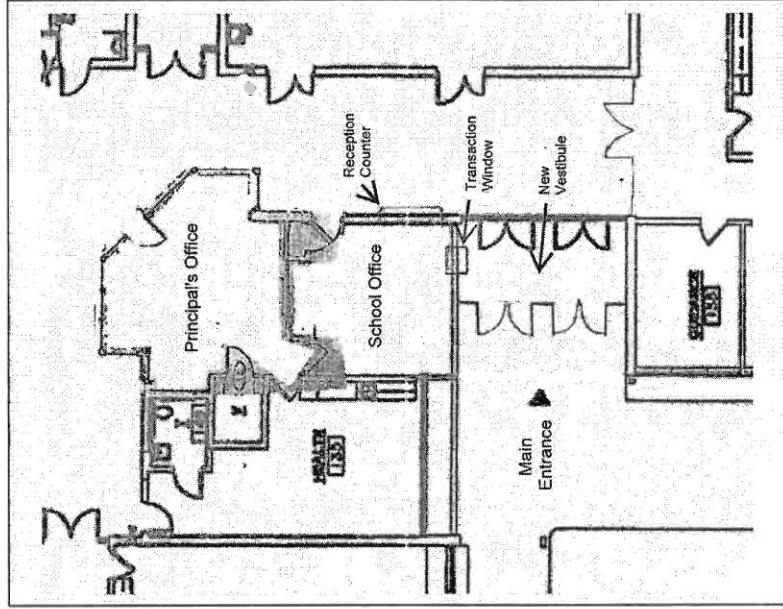
Financial impact of this project on the department’s operating budget will be minimal. There will be a small additional cost for maintaining the new electronic hardware systems of the vestibule doors and the new power-operated handicap doors. Since the project coincides with the building-wide security camera installation project, the cost of associated camera improvements has already been addressed. Hardware upgrades for security, clock and paging system will reduce breakdowns and improve reliability.

Cedar School Entrance - Proposed Changes

Existing




Proposed





Capital Improvements

PROJECT DETAIL SHEET

<p>Fiscal Year: 2020</p> <p>Department: Facilities Department</p> <p>Project Title: Planning for Fire Headquarters Interior Improvements</p> <p>Requested Amount: \$ 15,000</p>	
<p>Description: Contract for Professional Design Services to design alterations needed to improve space layouts and to update features at Fire HQ to better serve the needs of the Department.</p> <p>Since construction of the headquarters building in 1987, the Hanover Fire Department has grown and missions have expanded. In addition to simple deterioration over 31 years, the building presents functional deficiencies that need to be addressed to enhance functionality of the department. The conference room is frequently too small for small group meetings but has space for expansion into the adjacent inspections office; berthing spaces are inadequate and have become partial exercise rooms; facilities for female firefighters are inadequate; lockers for turnout gear are home-made out of wood which, being a porous material, is not suitable for gear potentially carrying toxic chemicals. Other needs include simple replacement of aged ceiling and floor tile and possible update of building systems.</p>	
<p>Project Overview: The mission and scope of Fire Fighting and Prevention has changed since the station was built. Regulations and necessary work practices require different attributes inside the workspaces of the Fire Headquarters. Segregation of street clothes from Firefighting gear and reporting requirements for emergency response require layout changes to create right-size spaces to meet these needs within the existing framework of the building. Design services obtained will provide schematic design of proposed changes and a budget estimate for a future Town Meeting appropriation.</p>	
<p>Financial impact of this project on the department's operating budget: This project will provide a planning budget for implementation of the design. Implementation will have both Capital and perhaps Operating Budget impacts. Operating Budget impacts would be required if Facilities were to take on any implementation efforts such as carpentry or other tradework.</p>	



Capital Improvements

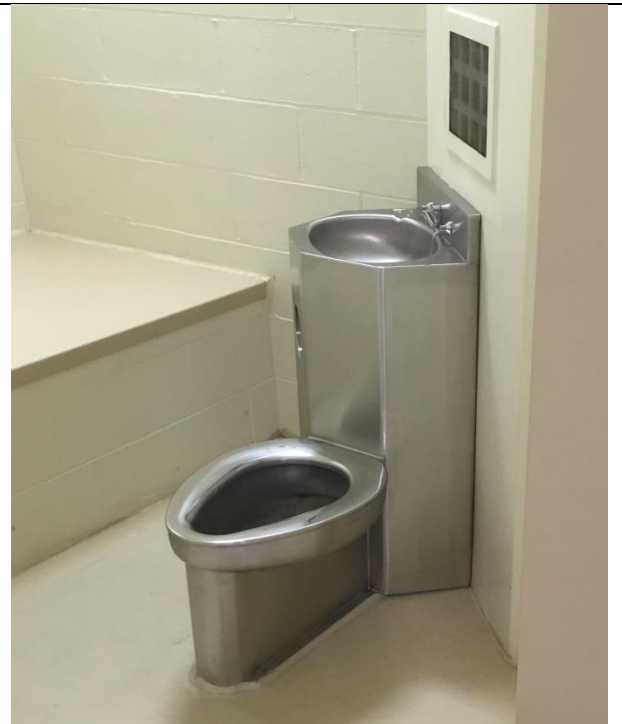
PROJECT DETAIL SHEET

Fiscal Year: 2020

Department: Facilities Department

Project Title: Replacement of Police Station Jail Cell Toilets

Requested Amount: \$ 35,000



Description: For the last several years the Department of Public Health's annual inspections of the jail cells at the Hanover Police Station have consistently issued deficiency scores regarding the condition of the stainless steel toilets in each of the seven (7) jail cells. Over the last 19 years, the standing water in each toilet has produced a rust-like stain in each toilet bowl. After trying many cleaners, we have been able to partially reduce some of the staining using a special polish obtained from the manufacturer, but staining still remains. Also, over time, the standing water in each toilet has cut a permanent groove into the stainless steel at the water line of each toilet bowl. In addition, the sink portion (of the combination sink/toilet assembly) fails to meet current "anti-ligature" rules that were not in effect when the Police Station was built.

Project Overview: This project involves replacement of seven (7) existing stainless steel toilet/sink units with 7 similar units that comply with the latest Massachusetts standards for jail cells*. The requested amount was the recommended budget estimate provided verbally by R.W. Irvine, the Facilities Department's plumbing contractor, after their estimator examined the jail cells, and was based upon an approximate cost of \$3,000 per toilet/sink unit, plus labor and related expenses.

(*The Commission on Accreditation for Law Enforcement Agencies, Inc. (CALEA) provides the framework for the standards in the Massachusetts Police Department holding cells. Chapter 72 of those regulatory standards details 28 requirements for holding cells.)

Financial impact of this project on the department's operating budget: There is no budgetary financial impact from this proposed improvement. Safety of inmates will be enhanced and the facility will be brought up to standards.



Capital Improvements

PROJECT DETAIL SHEET

Fiscal Year: 2020

Department: Facilities Department

**Project Title: Replace 2001 Ford F350 One-Ton
Dump/Plow/Sander**

Requested Amount: \$ 53,976



Description: The Facilities Department's Ford 2001 F350 is an eighteen year old truck that has reached the end of its service life and requires replacement. A recent inspection by our mechanic listed the following deficiencies: Needs brakes, much rot, no E-brake, plow frame bent, rotted frame, oil leaks, needs U-joint and dump alarm. This is an important vehicle for Facilities Department operations, used particularly for groundskeeping work on school grounds and ball fields, transporting dirt, mulch and supplies. During the winter, the truck is outfitted with a plow and sander and used extensively for snowplowing and daily sanding operations. The vehicle could suffer a major breakdown at any time and the impact to department operations would be significant.

Project Overview: We propose to replace this vehicle with a similar 2019 Ford F350 truck outfitted with a dump body and plowing package purchased through the County's MHQ collaborative. Although we had initially intended to propose the purchase of a pre-owned truck, we found that MHQ's discounted price for a new 2019 truck was so close to advertised prices of pre-owned low mileage 3 year old trucks that we concluded that purchase of a new truck was the wiser investment, providing more reliability and 3 additional years of operating life for nearly the same cost.

Financial impact of this project on the department's operating budget: The impact of this procurement will be to reduce vehicle maintenance costs, avoid a potentially large expense for a major repair, provide an improvement in fuel savings, and reduce labor expenditure of our maintenance staff which performs minor maintenance on our vehicles.

Existing Conditions of 2001 Ford F-350 1-Ton Dump/Sander



Equipment:

CONTRACT LINE REFERENCE	LINE DESCRIPTION	UNIT PRICE	QTY.	EXTENDED PRICE
	Reinforced plate mounted pintle ball combo			595.00
	7 Blade trailer plug			195.00
	2-3 yd. Dump Body Black Body			9,500.00
	Electric Hydraulics			1,175.00
	Manual Tarp			475.00
	Whelen LED DOT Kit Beacon and rear lighting Amber			1,865.00
	LED Worklights on rear hitch on a switch and on in reverse			375.00
	Electronic Back up alarm			100.00
	Fisher 9' HD Plow			6,350.00
	Fisher Rubber sno Foil			465.00
	Ventvisors			70.00
	Weathertech mats			125.00
	Shop supplies			295.00

TAX:	
TOTAL:	\$21,585.00

Vehicle Equipment Total:	\$53,975.40
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TERMS AND CONDITIONS

*This quote is valid for 60 days from the date of quote. Any purchase orders or approved quotes received outside of the 60 day quote period will be subject to price adjustments. By signing this quote, the customer is agreeing to pay, in full, for all items listed above. Any requests for changes, modifications, replacements, removals or additional items may be subject to additional fees and/or adjusted delivery dates.

M.G.L c. 30B applies to the procurement of all commodities quoted. Contract items have been collectively purchased pursuant to M.G.L c 30B sec 1c and M.G.L c.7 sec 22B. The government body is responsible to determine the applicability of M.G.L. c30B to off contract items, but not limited to, off contract items that have already been properly procured under M.G.L. c30B sec 1c and M.G.L. c7 sec 22A (purchases from a vendor on contract with the Commonwealth), other contracts procured under M.G.L. c30B sec 1c and M.G.L. c. 30B contract between the vendor and the jurisdiction. All off contract items must be procured under M.G.L. c. 30B.

The terms and conditions stated herein and the provisions of any agreement between MHQ and Buyer, if applicable, shall constitute the complete and only terms and conditions applicable to any and all purchases by Buyer from MHQ. Any additional and/or different terms and/or conditions printed anywhere including on, or with, Buyer's order shall be inapplicable in regard to any purchase by Buyer from MHQ.

ORDER ACKNOWLEDGEMENT

By signing this document you are agreeing to the above terms and conditions of this order from MHQ, Inc.

x _____
PRINT NAME

x _____
TITLE

x _____
SIGNATURE



Capital Improvements

PROJECT DETAIL SHEET

Fiscal Year: 2020

Department: Facilities Department

Project Title: Town Hall, Planning for Site Renovations

Requested Amount: \$ 15,000



Description: The scope of this project is to fund the architectural services of the Town’s “house doctor” architectural firm* to provide a detailed schematic design and budgetary cost estimate for a future construction project to make exterior site improvements at Town Hall.

(* Currently, the Facilities Department has issued an RFQ for architectural and design services for an on-call “house doctor” firm to provide on-call architectural services to the Town. The submittal deadline in the RFQ is 11/28/18; we expect to have the house doctor firm contracted and available to provide design services by January 2, 2019.)

Project Overview: The appearance of the grounds, parking areas, and outdoor entrances to Town Hall is quite poor and not consistent with the engaging appearance of the newly renovated historic section of the building. In addition, the long ramp to the side entrance to the building does not comply with accessibility standards. Improvement of the grounds had been the planned successor project after improvements to the building itself. The architectural firm will solicit input from appropriate parties, then develop and prepare a schematic design and budgetary estimate for site improvements to be submitted as a project proposal for a future town meeting article.

Financial impact of this project on the department’s operating budget: There will be no budgetary impact from this project.



28 Commerce Park Rd PO Box 1100 Pocasset, MA 02559

(508) 759-5636 FAX (508) 563-7915

Bob,

Thank you for the opportunity to provide a proposal for the reconstruction of the courts at Hanover High School. As I mentioned during our conversation Cape and Island Tennis & Track decided a few of years ago to move away from asphalt construction due to the widespread early failure that has been occurring across the northeast and the rest of the country in the form of small stripping cracks that are showing up in the top course within the first couple of years. I have attached a photo to illustrate the effect we are seeing. The cause of this is that the asphaltic cement that holds together the stone in asphalt paving is weaker than it used to be due to changes in the refining process and it is drying out more quickly, resulting in cracking where it used to flex. These cracks will open over time and cause a degradation of the courts surface that is almost impossible to rectify.

With that said, I did run the costs out in asphalt to give perspective between the two construction methods. When reviewing the cost/value comparison of the asphalt versus post tensioned concrete options for the courts on the following page, you will see that the approach is to show the associated repair and maintenance costs of the tennis facility over the next 30 years.

Although the model cannot be an exact prediction, it does illustrate the long-term results of each option. There have been a few assumptions that have been made for the sake of discussion and all future pricing is based on today's dollars with an annual 3% Cost per Living Index increase. All pricing is based on today's reconstruction costs and a layout of a four-court battery and adjacent two-court battery as discussed. Please note that this estimate is based on ideal asphalt, not the material that is readily available today.

Asphalt Construction – To rebuild the 6 courts in asphalt today including the site work the fencing, the price would be roughly \$335,800.00. The model assumes repainting the courts every 7 years, performing crack repair over the 6 courts and painting in year 12 and replacement in year 20. Again, this very optimistic.

Post-Tensioned Concrete Construction -- The initial investment in concrete courts is higher at \$445,110.00 but the benefit is that you do not have the crack repair and reconstruction costs down the road. The schedule shows repainting the courts every 7 years. The first concrete courts that we built were in 1989 at Rogers

High School in Newport RI and they look almost new after being repainted 25 years later. This is the best way to build a tennis court and the money you spend in initial cost is well worth the money you save in the long run. Our model shows the school saving over **\$459,000.00** building them right the first time.

Again, this can't be an exact prediction of the future but I hope this helps.

Best Regards,

A handwritten signature in black ink, appearing to read 'Eric Loftus', with a long horizontal flourish extending to the right.

Eric Loftus
Vice President
Cape and Island Tennis & Track
28 Commerce Park Rd
Pocasset MA 02559
508 759 5635

**Cost Comparison of Post Tensioned Concrete Vs. Asphalt
Hanover HS**

Number of Courts
 Number of Yards

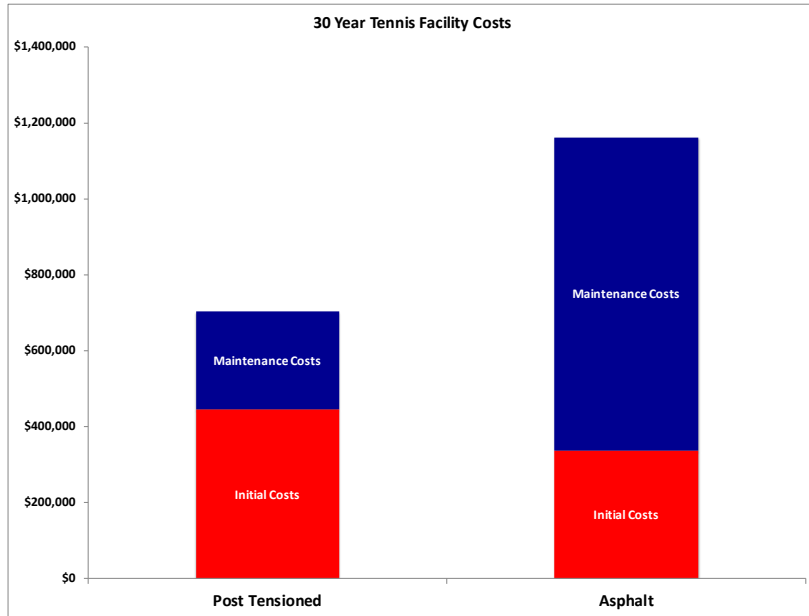
Cost of Crack Repair per liner foot Total Facility Cracks Year 14 900
 Cost of Resurfacing per square yard

Asphalt Maintenance Resurface Year 7
 Crack Repair and Resurface Year 14 (+/- 150' of crack repair per court)
 Rebuild Year 20
 Resurface New Courts Year 27

Post Tensioned Maintenance Resurface Year 7, 14, 21, 28

Future Pricing Based on Today's Actual Costs with an annual 3% Cost of Living Index Increase

	Post Tensioned	Asphalt
Initial Cost	\$445,110	\$335,800
Year 1		
Year 2		
Year 3		
Year 4		
Year 5		
Year 6		
Year 7	\$46,046	\$46,046
Year 8		
Year 9		
Year 10		
Year 11		
Year 12		
Year 13		
Year 14	\$56,631	\$90,665
Year 15		
Year 16		
Year 17		
Year 18		
Year 19		
Year 20		\$606,492
Year 21	\$69,649	
Year 22		
Year 23		
Year 24		
Year 25		
Year 26		
Year 27		\$83,165
Year 28	\$85,660	
Year 29		
Year 30		
Total	\$703,097	\$1,162,168
Maintenance Costs	\$257,987	\$826,368



Life Cycle Savings Of Post Tensioned Concrete \$459,071.04



October 15, 18

Robert Murray
Facilities Engineering Manager
Town of Hanover
Hanover, MA

I. Reconstruction of 6 Tennis Courts in Post Tensioned Concrete

1. Pulverize existing asphalt into base and add up to 2" of stone dust to fine grade
2. Remove and dispose of existing fence, net post footings and tennis equipment
3. Laser grade base to .83% slope
4. Furnish and install new net footings, posts, nets, and center straps
5. Furnish and install 1 ¾" black fusion bonded tennis fencing to match existing
6. Provide and install 4 ½" post tensioned tennis court slab including viewing area in upper courts
7. Surface courts with 4 Coat Plexipave system including concrete preparer
Colors chosen by owner: _____inbounds, and _____outbounds.
6. All post tensioned courts come with a 25 year guarantee against any structural cracking

Price: \$445,110.00

Note: Quote based on reducing facility from 8 to 6 court with a four court battery and an adjacent two court battery.

Scope of work and product specifications

POST TENSIONED CONCRETE

Owner Responsibilities:

Owner is responsible for any retaining walls, drainage and landscaping unless otherwise specified.

Provide any necessary permits; Local authorities required set back distance from lot lines.

Locate and establish all property boundaries pertaining to courts.

Provide suitable access for heavy trucks and equipment.

Locate and establish all underground utilities, septic or sewer lines. Call Dig Safe 1-888-344-7233.

Where necessary, remove trees and vegetation including their root systems. We recommend clearing tree's and root systems a minimum of 10' beyond actual court dimensions.

Net Post Installation:

Edwards posts are 3" heavy gauge steel with integrated lacing bars and polyester powder coated in a black finish. The net posts also have an internal brass winding gear mechanism. Installation includes two galvanized net post sleeves, a galvanized center anchor, center strap and our premium Cape and Island Tennis & Track net with fiberglass dowels. All tennis court hardware is to be the finest quality available.

One set of net post sleeves shall be set in concrete foundations which shall not be less than 18" in diameter at the top, not less than 30" at the bottom and not less than 36" in depth. All concrete for footings shall be 3,500 pound mix. The center strap anchors shall be set in concrete footings measuring 12" x 12" x 12". The base of the footings shall be slightly larger 15" x 15" to avoid the possibility of heaving.

Install two layers of 6-mil polyethylene over subgrade and tape all seams. The polyethylene acts as a moisture barrier and reduces friction when placing slab under compression.

Post Tensioning Material:

Post-tensioning material shall consists of 1/2" diameter, seven wire tress relieved strand, conforming to ASTM A-416 with an ultimate strength of 270 KSI. Strand shall be coated with a permanent rust preventative lubricant and wrapped with plastic sheathing. If strand sheathing is damaged or removed it is to be repaired by taping. A maximum of 6" exposed strand is permitted

at the anchor. End anchorage devices will conform to P.T.I. specifications. All dead end anchorages must be power seated. All strands are to be supported in beams to prevent vertical and horizontal movement during concrete placement. Concrete must be well consolidated especially in the vicinity of strand anchorages. ½" diameter strands shall be anchored at 28.9 KIPS, but may be initially stressed at 33 KIPS. A 9" diameter centered on the strand axis by 36" length shall be allowed for stressing equipment clearance. Slabs shall be designed using acceptable engineering practices in accordance with the American Concrete Institute Building Code Requirements for reinforced concretes and the Post Tensioning Institutes tentative specifications for post-tensioning materials. The soil condition and plasticity index of the court site is to be considered in determining strand spacing and beam requirements.

Cables will be spaced on specified centers, as directed in the engineers drawings.

Concrete Construction:

Cement: Cement shall be 3,500 pounds mix, with a minimum cement factor of 550 pounds.

Water: Water/cement ratio shall be .50.

Slump: Shall be approximately 4" depending on weather conditions on day of concrete placing.

Note: Cape & Island Tennis & Track reserves the right to use super plasticizers to increase workability of the concrete. In so doing, the slump will be altered but will be within the guidelines of proper concrete placement. The minimum compressive strength of the concrete after 28 days will be 3,500 pounds. The use of super plasticizers will be decided on a per job basis.

Aggregate: Aggregate shall conform to standard specifications for concrete aggregates ASTM C-33. Maximum aggregate size of ¾".

Air Entrainment: Air entrainment by total volume of concrete shall be 5 to 7% for ¾" to 1" max size coarse aggregate.

All concrete contents, mixing, delivery and placing shall meet General American Concrete Institute Construction Practices.

Joints: Single courts shall be poured monolithic with keyed expansion joint under net line.

The concrete shall have a compressive strength of not less than 3,500 pounds after 28 days. Concrete must attain a compressive strength of 2,000 pounds per square inch before final stressing.

Placing and Finishing: Concrete shall be leveled and placed using a laser guided system. Concrete shall be bull-floated and finished in accordance with Section 7.2 Act Standard 302, Recommended Practice for Concrete Floor and Slab construction. The final finish shall be a light broom finish.

Surface Tolerance: The concrete surface shall be flat to within ¼” under a 10” straight edge in a direction perpendicular to the slope but shall be within 1/8” under a 10” straight edge in the direction of the slope.

Curing: The concrete immediately after finishing shall be kept continuously moist for seven days by covering with polyethylene film.

Curing time shall be in accordance with surfacing systems manufacturers recommendations. Timing is critical on all of the above due to the possibility of disturbing the finished surface.

Surfacing:

Prior to surfacing, concrete must thoroughly cure before the application of any filler or color finish materials. Concrete normally cures within 28-40 days.

Surfacing – The Plexipave Coloring System, manufactured by California Products of Andover, Massachusetts shall be applied.

An ambient temperature of 55 degree and rising is required in order to apply the surfacing material.

Sweep and air clean area to be surfaced.

Acid etch court with Muriatic Acid and pressure wash acid off after it dries.

Apply one coat of concrete slurry as a leveling surface.

Concrete shall be acid etched with a Concrete Preparer as manufactured by California Products. This product requires no after wash.

Apply one coat of acrylic resurfacer. This coating is a leveler to fill in and even out minor voids and depressions.

Apply two coats of Colored Fortified Plexipave. These coats provide the court with a uniform surface texture, which can be regulated to permit slow to fast speed of play.

Layout, tape and hand paint lines per USTA specifications.


Install net posts in sleeves previously set in concrete footings, hang net and center strap.

Leave the work area in a clean and orderly condition.

Note: Cape and Island Corporation guarantees Post Tensioned Concrete courts against structural cracking for a 25 year period. Small hairline cracks do occasionally occur after the initial pour until the slab is tensioned.

Please Note: Do not use black-soled shoes. Use only flat soled (no knobs) tennis shoes. Hockey sticks, black soled sneakers, roller blades, bike tires and skateboards will mark or damage the court surface.

All material is guaranteed to be as specified. All work to be completed in a workman like manner according to standard practices. Any alteration or deviation from the above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance. The contractor agrees to carry Workmen's Compensation and Public Liability Insurance required by the United States Government and the state in which this work is to be performed.

Authorized Signature:  Date: 10/15/2018
Eric Loftus, Tennis Division

Acceptance of Proposal

If the foregoing meets with your acceptance, kindly sign and return the attached copy of our proposal. Upon its receipt it is understood the foregoing, including the terms and conditions set forth above, will constitute the full and complete agreement between us.

Authorized Signature: _____ Date: ____/____/____

This contract expires thirty days from the date hereof, but may be accepted at any later date at the sole option of Cape and Island Tennis & Track.

Note: Your account will be subject to a service charge of 1.5% per month (18% per annum) on all invoices not paid within our normal payment term.