

# REQUEST FOR BOARD ACTION / CONTRACT CONTROL FORM

**Tracking Number:** 1.

**Date of Request:** September 7, 2007

**Date Request Received:** September 7, 2007

**Board Meeting Date Requested:** September 17, 2007

**Board Meeting Date Assigned:** September 17, 2007

**Short Title:** Update On Construction At Topsail High School.

**Request Status:**

- Request is proceeding to Board of Commissioners
- More information is needed – see attached
- Request on hold – no further information needed
- Other:

**Background:** At a September 7, 2007 meeting between the County Manager, Finance Officer and school officials, school officials were asked to provide an update on the construction of the new Topsail High School to the Board of Commissioners and to address recent citizen concerns at the next Board meeting.

*(Administrative Use Only)*

**Specific Action Requested:** Receive construction update.

**CONTRACT TYPE**

Requested by: Lori Brill  
Department: County Manager  
Title:  
Contact Phone: 910-259-1200  
Contact Fax:

- Renewal
- For Service(s)
- Intergovernmental – County as Grantee
  - Federal Grantor
  - State Grantor
  - Grant or
- County as Grantor
  - County Funds
  - Other Funds:
- Revision
- For Equipment

**PURCHASING** Budgeted Item:  Yes  No  
Date Rec'd:  Reviewed and Approved  
 Comments on Reverse

Date Sent:

Signed:

**ATTORNEY**  Reviewed and Approved  
Date Rec'd:  Legal Problem(s)  
 Comments on Reverse

Date Sent:

Signed:

**FINANCE** Sufficient Funds  Available  
Date Rec'd  Not Available  
 Budget Amendment Necessary  
 Budgeted Amendment is Attached  
 Comments on Reverse

Date Sent:

Signed:

**CLERK** Signature(s) Required:  
 Board Chairman/County Manager  
 Other:

Date Rec'd Approved by Board:  Yes  No  
At meeting on



Allison Sholar, Superintendent  
Pender County Schools  
925 Penderlea Hwy.  
Burgaw, North Carolina 28425

September 12, 2007

Re: Construction Update

The purpose of this update is to provide you with as much information about our construction projects as possible. We know that you will or have received many questions about the projects from the public and Pender County officials. If any information that you need is not included in this report please contact me and I will get it for you if possible.

There were ~~twelve~~ projects included in our bond referendum. The scope of these projects included new construction, additions, renovations and two Auditoriums. The Pender County School board chose ~~LS3P~~ as our Architectural firm to assist in planning and design of these projects.

The first project was Pender High School. Renovations at this school included the following; the Science classrooms were completely renovated, new ceilings installed, new lighting, flooring, HVAC repairs, new intercom system, new tennis courts and enlarging the running track. The cost of this project was \$2,800,000. It was completed in January 2006.

The second project was Burgaw Elementary. This project consisted of a new classroom wing, kitchen and cafeteria. The two old classroom wings were completely renovated with new flooring, ceilings, lighting, HVAC repairs, painting, doors and an enclosed walk way. The old cafeteria and kitchen will become four new classrooms. The estimated capacity of this school is seven hundred and fifty.

The bond proceeds used on this project is \$6,078,608 and ~~\$350,000~~ will be used from the schools capital fund to complete the project. This was agreed upon during contract negotiations when the bids exceeded budget projections.

The third and most challenging project is the new Topsail High School project. The first challenge was finding the appropriate site on which to locate the school. It is very difficult to find a site large enough to accommodate a 1500 student high school capacity in the Hampstead area because there is no public sewer and the abundant supply of wet lands in the area. After careful consideration the decision was made to purchase property adjacent to the existing high and middle schools. If we decided to move the school to a new location we would have to purchase 60 to 70 acres of usable land that would support a sewer system.

The property owner of the adjacent property was planning a development and to offered to supply sewer service to the school and eventually to the other two schools. This was great news for our school project, however, we didn't know how difficult it was going to

be to get this accomplished. The project was eventually sold and the sewer agreement with new owner will supply service to all three schools. Construction on the system will start in October and will be ready for use before the school opens.

Rick Dutka was assigned to this project as the construction supervisor. Rick has managed the construction of Cape Fear Elementary/Middle Schools and the Heide Trask High School. He has worked with Pender County Schools for 10 years and his record has been excellent.

The decision to purchase approximately 28 acres of the adjacent property allowed us to use the existing football and baseball fields instead of 60 to 70 acres. Land prices in the area were ranging from about \$25,000 to \$60,000 per acre at that time. We estimated that we would save four to five million dollars by not having to purchase the extra land and build new athletic fields.

Before purchasing the property the site was evaluated by the U.S. Army Corps of Engineers and the North Carolina Division of Water Quality for wetlands and other environmental concerns. Several other governmental agencies also reviewed the site as a part of the permitting process.

An engineering company was hired to do soil borings at strategic areas of the site to determine such things as bearing capacity for design purposes. They were called back for a second set of borings after the initial samples were evaluated.

Numerous meetings were held with the Architects to review program requirements, site design, equipment, allowances, space, band room, vocational classes and many other items. The Architect worked diligently to provide space for all the programs without compromising design that was presented to the voters in the bond referendum. The state average space per student in high schools in the state is 179s.f. in 1200 student schools and 159s.f. in 1600 student schools and ours is 150s.f. in a 1500 capacity school.

The cost of school construction for high schools while we were planning the bond referendum was \$115.12 per sq. Ft. We increased our estimate to \$125.00 per sq.ft. for inflation. The cost increased to 160.48 the following year and schools all over the state were faced with bids much higher than expected. Natural disasters and high steel prices caused prices to soar beyond everyone's calculations. Our bid was 160.07 per sf. slightly below the state average. We were 13,500 sf. below the state average per student. When this is factored in the price would have been \$151.00 per sf. compared to the state average.

The Auditorium (fourth project) was added to this project because it was more economical to build it as a part of the school. This allowed us to take advantage of the parking lot and other amenities on the site. By being a part of the school we would not have a separate HVAC system and utility service.

We had value engineered during the design phase but more needed to be done so we started over again. We began by reviewing the plans and creating another list. The Architect and the contractors were asked to do the same. The lists were compiled and HICAPS a construction management firm was hired to review the plans for possible cost savings. All the items were reviewed and a cost savings of \$584,406 were identified and approved. Some items were not accepted because of code requirements, permit issues or life cycle costs. There are further savings expected in the allowances and as we progress through the project we will continue to look for ways to save.

The contract date for this job to be completed is December 2008 and under the contract budget. We have a very good contractor and have not had any serious problems. The value engineering and brick allowance information is attached for your use.

The fifth project is West Pender Renovations. Because of increased cost the scope of work at this site was reduced. The most important item was window replacement for energy conservation and safety. The old metal windows could not be shut or sealed correctly. This was completed in August of 2007.

The sixth project is Penderlea School renovations. This project scope was also reduced to new windows in the gym and auditorium. A new playground is being installed this week that will have age appropriate equipment. It was the only elementary school without a playground.

The gymnasium has had a new HVAC system installed this summer. It was the only gym without air conditioning in the county. This school starts in July and there were days that it was too hot for the children to play outside. We will be improving the HVAC system during their fall break.

The seventh project is Burgaw Middle School renovations. The gymnasium showers and restrooms were in serious need of repair and renovations. The areas were cleaned, new fixtures installed, new ceilings, lighting and toilet partitions installed. New bleachers were installed and the floors refinished.

The parking area on the west side of the gym was paved. This is the area where the buses drop off and pick up the children.

The cafeteria soffit was replaced with new metal material. The old exterior was decaying from over 50 years of service. New windows have been ordered for the building but have not been delivered.

Renovations are planned for the science rooms during the year. We will coordinate the renovations with the staff.

The eighth project is the Rocky Point Primary addition. This will be a 8 room classroom building. We plan to bid the project next month.

The ninth project is the Heide Trask Auditorium. The design is almost finished and we plan to bid the project next month along with Rocky Point.

The tenth project is the Topsail Middle School Addition. This project is in the design process and will be bid next year. This building will be located behind the existing high school and the mobile classrooms must be moved. This cannot be done until we move the high school. This is projected to be January or February 2009.

The eleventh project is the Conversion of Topsail Middle School to a new Topsail Elementary School. This will take place immediately after the middle school moves to their new site. The projected timeline is June-August 2009.

The twelfth project is the construction of the new Central Services Building. There are not any funds available at this time for this project. All funds have been allocated to the school projects.

Thanks,

David Smith, Director of Auxiliary Services

From:  
To: "Andy Aretakis" <[andvaretakis@ls3p.com](mailto:andvaretakis@ls3p.com)> "David  
Date: Smith" <[david.smith@pender.k12.nc.us](mailto:david.smith@pender.k12.nc.us)>  
Subject: Wednesday - September 12, 2007 10:50 AM Final  
Brick Selection

Dear David:

Listed below are the steps that were taken in the brick selection for  
Topsail High School.

1. The specifications provided Allowances for the 3 types of brick in the Bid Documents. The Type 1 Gray Utility Brick (field color) were \$1,300 per 1000. The Type 2 Brick 8" x 8" (white accent) were \$1,800 per 1000. The Type 3 Brick (light cream soldier closure brick) were \$1,000 per 1000.
2. After the bid, during the value engineering, the brick allowances were reduced by \$200 per 1000 for each type of brick. Based on 350,000 brick that reduction by deductive change order was a deduct of \$70,000 to the contract with Clancy & Theys. After the bid we had discussed the brick colors with several manufacturers, and had a better idea what the actual brick prices would cost from each manufacturer. As a result of the value engineering, Type 1 Brick allowance reduced to \$1,100. Type 2 Brick allowance reduced to \$1,600 per 1000. Type 3 Brick allowance reduced to \$800 per 1000.
3. We asked 3 manufacturer to install brick panels at the jobsite, so that the colors and quality of the brick could be evaluated with the existing buildings, along with the cost and time of delivery. These Manufacturers were Palmetto Brick, Taylor Clay Products, and Carolina Ceramics Brick. The objective was to provide a high quality brick at an economical cost, which had the 3 colors that would blend well to give the building the desired appearance and contrast. The panels were reviewed by LS3P, David Smith, and Dr. Kaniuka. Pender County Board of Education and a group of parents were also given the opportunity to review and approve the samples.
4. The brick panels were erected and the following costs were provided by each supplier:

General Shale Brick:

Type 1 Brick (Carolina Ceramics Colonial Gray Velour Utility) \$ 786.45 per 1000

Type 2 Brick (Cunningham Cascade White Velour 8" x 8") \$ 1,860.00 per 1000

Type 3 Brick (Carolina Ceramics Empire Ivory Velour Closure) \$ 576.73 per 1000

[Notes added by L. Brill]

Roger Moore Brick:

• Project uses Type 1, 2 & 3 brick

Type 1 Brick (Palmetto 1.25 Greystone Utility) \$ 739.00 per 1000

Type 1 : 75%  
2 : 10%  
3 : 15%

Type 2 Brick (Harmar 850 Wirecut 8" x 8") \$1,890.00 per 1000 Type

3 Brick (Palmetto .25 Greystone Closure) \$ 486.00 per 1000

Custom Brick Company:

Type 1 Brick (Taylor Oyster Grey Wirecut Utility) \$ 971.43 per 1000

Type 2 Brick (Taylor 301 White Wirecut 8" x 8") \$ 1,646.00 per 1000

Type 3 Brick Taylor 301 Buff Wirecut Closure) \$ 745.17 per 1000

Modular brick is 7" long (requiring more mortar)  
Utility brick is 12" long  
→ Difficult to compare.

Because of the high cost difference, the Taylor brick was eliminated as a choice. Dr. Kaniuka, LS3P, and David Smith all agreed that the Carolina Ceramics brick supplied by General Shale Brick had the best color arrangement for the building, and that the Carolina Ceramics Brick seemed to be a higher quality brick. Based on the cost difference between the Carolina Ceramics Brick and the Palmetto Brick being approximately \$60\* per 1000 for 350,000 brick, the cost difference for the entire project is only approximately \$21,000, since most of the brick are the Type 1 utility brick, and the cost for the Type 2 brick is \$30 less from the General Shale Brick price than the Roger Moore Brick price. The brick sample for the Palmetto Brick was provided in modular brick and not in utility brick, which made evaluation of the Palmetto Brick more difficult. All of the suppliers were asked to install their sample panels with utility brick, so an accurate comparison could be made.

\* estimated difference considering cost difference of Type 1, 2 & 3 brick.

Based on all of our judgment, the brick from General Shale was selected because we felt that the quality of the brick was superior, the colors were more aesthetically pleasing with the proper contrasts, and the cost difference was minimal for the most important exterior decision of the appearance of the building. Dr. Kaniuka made the final decision that the color arrangement of the General Shale Brick panel would look best on the building, and we agreed.

I hope this answers any questions concerning the brick selection.

Thanks,

Andy

Andy Aretakis, AIA  
Senior Associate

LS3P ASSOCIATES LTD.  
Architecture Interior Architecture                      Planning  
2528 Independence Blvd. Suite 200 Wilmington NC 28412  
Tel:     910-790-9901

## AVERAGE SCHOOL COSTS

	#	Total Cost	Building Area	Cost/sq.ft.
<b>Year : 2007</b>				
Elementary	9	\$131,281,517	845,170	\$155.33
Middle	1	\$24,390,000	149,739	\$162.88
High	1	\$50,866,482	272,409	\$186.73
Other	1	\$9,829,584	72,839	\$134.95
<b>Totals/Avg:</b>	<b>12</b>	<b>\$216,367,583</b>	<b>1,340,157</b> sq.ft.	<b>\$161.45</b>
<b>Year : 2006</b>				
Elementary	26	\$346,420,474	2,387,532	\$145.10
Middle	2	\$32,985,363	213,990	\$154.14
High	7	\$185,518,210	1,164,514	\$159.31
Other	1	\$8,474,468	59,318	\$142.87
<b>Totals/Avg:</b>	<b>36</b>	<b>\$573,398,515</b>	<b>3,825,354</b> sq.ft.	<b>\$149.89</b>
<b>Year : 2005</b>				
Elementary	17	\$206,067,375	1,526,896	\$134.96
Middle	5	\$89,544,208	627,668	\$142.66
High	5	\$184,265,946	1,148,210	\$160.48
Other	1	\$18,891,440	122,488	\$154.23
<b>Totals/Avg:</b>	<b>28</b>	<b>\$498,768,969</b>	<b>3,425,262</b> sq.ft.	<b>\$145.61</b>
<b>Year : 2004</b>				
Elementary	13	\$127,795,581	1,147,196	\$111.40
Elem/Middle	1	\$11,858,253	111,038	\$106.79
Middle	5	\$72,993,630	621,218	\$117.50
High	5	\$155,420,887	1,325,253	\$117.28
Other	1	\$18,709,000	155,164	\$120.58
<b>Totals/Avg:</b>	<b>25</b>	<b>\$386,777,351</b>	<b>3,359,869</b> sq.ft.	<b>\$115.12</b>
<b>Year : 2003</b>				
Elementary	15	\$114,610,674	1,204,469	\$95.15
Elem/Middle	1	\$10,612,350	102,000	\$104.04
Middle	5	\$54,946,432	614,192	\$89.46
High	4	\$83,834,609	797,494	\$105.12
<b>Totals/Avg:</b>	<b>25</b>	<b>\$264,004,065</b>	<b>2,718,155</b> sq.ft.	<b>\$97.13</b>
<b>Year : 2002</b>				
Elementary	18	\$146,057,689	1,531,003	\$95.40
Middle	7	\$79,314,526	873,810	\$90.77
High	2	\$46,693,281	413,525	\$112.92
Other	1	\$4,540,500	44,489	\$102.06
<b>Totals/Avg:</b>	<b>28</b>	<b>\$276,605,996</b>	<b>2,862,827</b> sq.ft.	<b>\$96.62</b>
<b>Year : 2001</b>				
Elementary	18	\$139,965,851	1,484,176	\$94.31
Middle	5	\$64,049,328	658,528	\$97.26

LARGE INCREASE FROM 2004 - 2006

Costs are contract amounts for new schools and do not include land, furnishings, design fees, surveys, testing or legal expense. All schools are not included - only reports received. **SCHOOL PLANNING, NCDPI**  
05-Sep-07

Topsail High School  
Hampstead, North Carolina  
Value Engineering Options

15-Nov-06

ITEM	VALUE	YES/NO	TOTAL	RESPONSE
Delete bulkheads in cafeteria/ Provide flat ceiling	\$15,600	YES	15,600	
Delete painted gyp. Ceilings in 1st floor mechanical rm	9,200	YES	9,200	
Change flooring in janitorial closets to sealed concrete	3,829	YES	3,829	
Change ceramic tile in men/women,s restrooms-vinyl	1,218	NO		Life cycle cost of ceramic is more l
Change cast iron waste to PVC where permitted	8,000	YES	8000	
Change cast iron roof drain piping to PVC	16,000	YES	16000	
Change 6" ductile iron water main in bldg to c-900PVC	16,000	NO		Not permitted by bldg. code
Change grease trap piping to PVC	2,000	YES	2,000	
Delete floor drains and hose bibs in single toilets	4,000	NO		Needed for sanitation purposes
Change condensation piping to PVC	2,000	YES	2,000	
Delete site lighting, owner to lease from Progress En.	81,248	YES	81,248	Convert site lighting on all 3 schools est. savings 500m
Delete theater lighting, owner to purchase	66,520	NO		Not reasonable considering installation costs
Delete generator and pad	33,592	NO		Will be needed during storms and emergencies
Delete fire alarm conduit and use plen. Rated cable	34,188	YES	34,188	
Delete cable tray system	26,000	YES	26,000	This will provide easier access to wiring for the future
Change EMT Fittings to die cast set screw type	26,000	YES	26,000	
Reduce curb and gutter at St. John's Road	7,687	YES	7,687	
Reduce curb and gutter at west side of site	7,289	NO		Needed for storm water and erosion control
Change Zoysia sod to Turf type sod	97,500	NO		
Change Zoysia sod to Zoysia Sprigged	81,032	NO		
Change Zoysia sod to Tifton 419 sprigged	97,880	YES	97,880	
Delete topping slab and water proofing, gym mech/loft	7,687	NO		Needed to protect gym flooring
Change ground face block to regular in gym	68,000	YES	68,000	
Change glass block to regular in wall between gym's	1,600	NO		
Reduce all brick allowance by 200 per thousand	76,400	YES	76,400	
Delete specification section 4200 Unit Masonary	30,000	YES	30,000	
Change roofing material to 60 mil TPO	15,680	NO		we discussed this with our consultants and
Change roofing material to 45 mil TPO	38,800	NO		because of the location of this school we need the
Change Roofing material to 60 milreinforced EPDM	32,670	NO		better roof for moisture and wind control.
Delete 1/2"coverboard, install 2.5' polysoc. Insulation	45,600	NO		
Delete membrane waterproofing under at slab on grade	28,000	YES	28,000	



New topsail High School  
Possible Cost Reduction Items

- 1 Project Schedule-
  - CM will produce
  - Is manpower loading requirement beneficial
- 2 Liquidated Damages-
  - \$1000/ day- 30 days = \$30,000 *NO*
- 3 Allowance Items- can the amounts be reduced
  - Permits- \$15,000 *NO*
  - Masonry- \$1,300/M *YES*
  - Media Center- \$120,000 *YES*
  - Musical Instrument Storage- \$60,000 *NO?*
  - Unsuitable soils- 1,000 CY *NO*
  - Moisture Remediation- \$50,000 *YES*
  - Graphics- \$20,000 *NO*
  - Acoustical Treatment- \$50,000
  - Pump Station Refurb.- \$15,000 *NO*
- 4 Site Lighting-
  - Lease through Progress Energy vs. purchase - *DONE*
- 5 Asphalt Design-
  - Stone base NCDOT 520, Asphalt NCDOT 610 & 645
- 6 Curb and gutter requirements- *~ 694 LF*
  - Approx. 10,700 LF
- 7 Reduce parking / drives-
  - Can existing parking be utilized *NO*
- 8 Landscaping-
  - Can plant sizes be reduced or species changed - *By OWNER*
- 9 Fencing requirements-
  - approx. 7,300 LF *?*
- 10 Reduce concrete walks-
  - over 104,000 SF *NO*
- 11 Rated wall / ceiling requirements- *NO*
  - With sprinkler system can rating requirements be reduced
- 12 Ground Face Block in Auditorium- *DONE*
  - Is painted CMU less costly

**New topsail High School  
Possible Cost Reduction Items**

- 13 Exterior Masonry details-
  - Can 8x8 accent courses and soldier courses be reduced or eliminated
- 14 Glass Block-
  - Are store front materials less costly
- 15 Roofing requirements- Heat welded Thermoplastic specified *SINGLE PLIES 60 mil*
  - EPDM - *RUBB*
  - Built-up
- 16 Auditorium seating, equipment-
  - Flat floor vs. sloped *WV*
  - Seating options
- 17 Gymnasium equipment-
  - Can bleacher spec or quantity be reduced
  - Goals and scoreboard spec
- 18 Door hardware-
  - Can Grade 1 spec be reduced
- 19 Corridor floor finishes-
  - VCT or Stained Concrete vs. Porcelain / Ceramic Tile
- 20 VCT in lieu of carpet-
  - In Office Areas
- 21 Ceiling tile spec / size-
  - 5/8" vs. 3/4" thick
  - 2x4 vs. 2x2
- 22 Exterior metal soffits-
  - Are drywall soffits less costly
- 23 Drywall ceilings-
  - Can laying ceilings be used
- 24 High ceiling / bulkheads at Cafeteria-
  - Can ceiling be one level and eliminate bulkheads
- 25 Plumbing piping materials-
  - PVC vs. copper water piping
  - PVC vs. cast iron waste piping
  - PVC roof drains vs. cast iron

**New topsail High School  
Possible Cost Reduction Items**

- 26 Electrical conduit types-
- J-hooks vs. raceways
  - MC cable
  - Individual outlets vs. Dual channel surface mounted metal raceways
- 27 Fire alarm conduit-
- Rated cable vs. hard conduit