



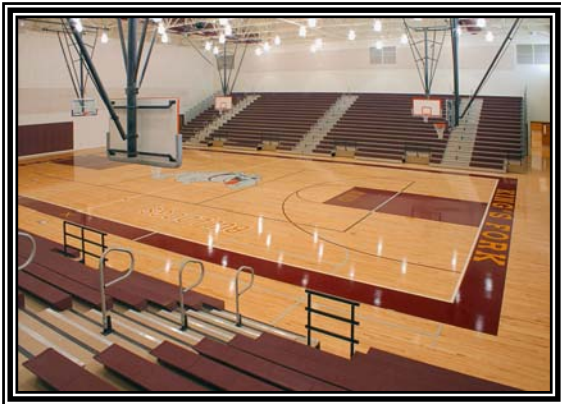
**New High Schools**  
Wise County, Virginia

Design and Construction PPEA

September 23, 2011

**Phase II**

**ORIGINAL**



*Kings Fork High School  
Suffolk, Virginia  
Designed and Constructed by S.B. Ballard and RRMM*



**S.B. Ballard Construction Company**

2828 Shipps Corner Road  
Virginia Beach, Virginia 23453  
Phone: 757.440.5555  
Fax: 757.451.2873  
www.sbballard.com

**RRMM Architects**

129 W. Virginia Beach Blvd.  
Norfolk, VA 23510  
Phone: 757.622.2828  
Fax: 757.622.2430  
www.rrmm.com







**S.B. BALLARD**  
**CONSTRUCTION**  
**COMPANY**

September 23, 2011

Mr. Ron Vicars, Director of Business & Finance  
Wise County Public Schools  
628 Lake Street  
Wise, Virginia 23293

Re: PPEA Detailed Proposal for New High Schools

Dear Mr. Vicars:

S. B. Ballard Construction Company, in association with RRMM Architects and Maxim Engineering is pleased to present this Public-Private Education Facilities Act (PPEA) detailed proposal to Wise County Public Schools for the design and construction of two (2) new high schools as per the RFP issued June 28, 2011.

We remain very excited at the prospect of being able to design and build these much needed new replacement facilities for Wise County Public Schools. We welcome the opportunity to participate as your Design/Build partner as we all work together continuing to fulfill your goals to enhance the educational facilities of Wise County.

We have assembled an energetic, diverse, and highly experienced team to handle all aspects and elements needed to bring this project to fruition. This team and its offer to Wise County Public Schools provide an economical, effective, and efficient solution to meet the critically pressing need for new schools, in a very timely manner and with numerous benefits over the design-bid-build method currently in use.

Please note that it is our intent that all statements and supporting documents included in our proposal to you dated August 11, 2011 remain in full force unless stated otherwise in this issuance.

**Please note that we consider Section 13 of this single presentation binder to be excluded from public inspection and release under the Wise County PPEA Guidelines revised September 2008 and the Virginia Freedom of Information Act.** We intend that the documents provided in Section 13 be considered as part of our overall proposal, but we believe these materials are excluded as per the cited provisions. Accordingly, we ask that Wise County Public Schools agree to accept these materials in confidence, exclude them from public inspection and release, and take appropriate action to protect them from disclosure, until such time as an interim or comprehensive agreement is reached with one of the competing Design/Build teams.

[www.sbballard.com](http://www.sbballard.com)

2828 Shipps Corner Rd. • Virginia Beach, Virginia 23453 • (757) 440-5555 Fax (757) 451-2873



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**CONSTRUCTION**  
**COMPANY**

Protection of these materials is necessary because they constitute at least one (1) of the following: (i) Trade secrets of the proposer as defined in the Uniform Trade Secrets Act, (ii) financial records of the proposer that are not generally available to the public through regulatory disclosure or otherwise, and (iii) records related to the proposal that, if made public prior to the execution of an interim agreement or a comprehensive agreement would adversely affect the financial interests of the bargaining position of the S.B. Ballard/RRMM/Maxim team or Wise County Public Schools.

We look forward to the final step in this selection process and are ready to devote all necessary resources required to immediately partner with Wise County Public Schools on this exciting and challenging opportunity. Our team is ready to present our concept(s) on Monday, September 26, 2011 and should you required additional information before this time, Stephen Ballard and additional members of our team will be available to address your questions and comments or to assist in any other manner that you may require.

Please feel free to contact Neal Barnes or Stephen Ballard directly:

Office: 757-440-5555

Office After-Hours: 757-440-7690

Stephen Ballard Cell: 757-647-5555

Neal Barnes Cell: 757-777-1353

Thank you for your continued consideration of our team.

Cordially yours,

Mark Payne  
V.P. Pre-Construction Services  
S.B. Ballard Construction Company  
2828 Shipps Corner Road  
Virginia Beach, VA 23453

[www.sbballard.com](http://www.sbballard.com)

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**Executive Summary – Detailed Phase:**

One of the primary responsibilities of local governing authorities is to ensure that every child within their district or county is provided the best education possible. The two most critical factors in providing quality education are hiring qualified administrators and teachers and providing students with an environment that is conducive to learning. In order to meet these requirements and to provide the highest quality educational opportunity to its residents, Wise County Public Schools recognizes the need to modernize its school facilities.

Wise County Public Schools is seeking the most cost-effective method of delivering modern, efficient, and effective new high schools to meet this need and, to do so, have elected to solicit a Design/Build proposal from interested firms under the authority of the Virginia Public-Private Educational Facilities and Infrastructure Act of 2002, with guidelines as revised and approved by them September, 2008 (PPEA).

S.B. Ballard Construction Company, in cooperation with their design/development associates RRMM Architects (RRMM) and Maxim Engineering (Maxim), has undertaken an in-depth review and analysis of all available information and believe that we have devised an overall program to provide the citizens and students of Wise County with two new school facilities that will expeditiously and economically move them towards their stated goals. We feel that this challenging, complex, and difficult step on the part of Wise County will establish their area as having one of the best school systems in the region, a ‘world-class school system’ with first-rate modern facilities that are second to none.

Based on our team’s collective experience with PPEA projects, we believe that the individual new facilities referenced in our proposal are ideal candidates for delivery under a PPEA agreement. In order to establish a cooperative working relationship with Wise County Public Schools, Wise County governing authorities, and the concerned citizens and students of the county, the S.B. Ballard/RRMM/Maxim team **will commit to deliver the project on or before December, 31, 2013**, (faster and at a lower cost than if the same facilities were procured using the current design-bid-build method of procurement), while maintaining the highest levels of construction quality, energy efficiency and the most recent and up-to-date information technology capabilities.

We strongly believe that providing a world-class public education system is a primary and much needed next step in the process of enabling the future leaders of Wise County to realize their fullest and best potential, and that this action on the part of the Board and County will generate benefits to your area that go far beyond an enhanced educational opportunity.

Recent studies by the Council of Educational Facilities Planners have shown that students in new or renovated schools have test averages 5-to-17 percentile points higher than those in old or sub-standard facilities. By constructing these two new high schools, Wise County will be improving the quality of education for its students while enhancing its own future economic prosperity and economic stability. The Southern Growth Policies Board has performed studies that confirmed a direct link between improving the educational system in a community and economic growth. These studies show that by enhancing the educational environment, raising the pride and educational capabilities and expectations of students, and improving graduation rates, there are

noted improvements in the economic growth and well-being of a community. The reasoning behind this is simple and straightforward: businesses considering expansions or relocations consider many different factors in their analysis of a given region. At or near the top of most lists are the quality of the school system and the skill level of the potential work force.

Wise County Public Schools recognizes that this effort on their part is important towards developing the necessary economic catalyst to sustain and expand upon its future economic growth and prosperity. Enhancing the level of school facilities is an instrumental part of this progressive approach of creating an environment conducive to a gradual improvement of the education level of the local workforce, adding impetus to the goals of attracting new businesses, private commercial development, and the expanding family populations that these mutually supportive occurrences create, while expanding the tax base in the process.

We have utilized the “Education Program Space Summary” for a New Prototype 750-Student High School issued via your RFP dated June 28, 2011, modified by subsequent supplemental information issued by MB Kahn throughout this process as the basis of our preliminary design, pricing, and scheduling assumptions.

The S.B. Ballard/RRMM/Maxim team is honored to be considered as your partner in this exciting new endeavor and in sharing the vision of Wise County Public Schools and Wise County by expanding the functionality and capabilities of the school system facilities.

### **Team:**

**S.B. Ballard Construction Company** is one of the largest and most respected general contracting firms domiciled in the Commonwealth of Virginia. The firm has an extensive, well-defined level of experience and proven expertise in the successful completion of numerous educational facilities in both the public and private sectors, covering every conceivable aspect of this highly-specialized and extremely challenging segment of the industry. Their unmatched record of achievement in always completing these projects on schedule and within budget has resulted in the fact that, at any given point in time, a majority of their work is for educational system clients and an average of 85% of their ongoing work volume is for repeat customers. S.B. Ballard is the managing partner of the proposed team.

**RRMM Architects** is commonly recognized as one of the pre-eminent design firms in the region and is regularly acknowledged by the industry and their peers for their exceptional work in the design of educational facilities, having won many state and national awards for their work in this specialized field. RRMM Architects has designed over 200 public schools in the Commonwealth. Drawing on their strong management staff they will provide the overall coordination and leadership requirements of the entire design team, including optimizing the participation of additional regional design and specialized engineering firms. S.B. Ballard and RRMM have a long and successful record of working together on similar projects.

**Maxim Engineering** is a leading Wise County civil engineering firm with extremely strong experience and exceptional expertise in successfully resolving site-related issues on complex projects in the region. Their unique combination of local knowledge and extensive problem-



solving capabilities, combined with their strong, local professional staff, make them the ideal team partner to assure that the complicated site requirements for both new schools is designed, undertaken and completed with the highest degree of professionalism.

**Kaufman & Canoles Consulting** is a highly-respected municipal development consulting firm which will act in those capacities for the team. They have extensive experience in the PPEA process and will be available for the benefit of Wise County Public Schools to aid and assist them as we progress forward. Given their understanding of the unique requirements that such an ambitious project entails, their support and guidance will be invaluable to both the S.B. Ballard /RRMM/Maxim team as well as the various county jurisdictions. S.B. Ballard and K&CC have a long and successful record of working together on similar projects.

**Kaufman & Canoles, P.C.** is one of the oldest, largest, and most experienced law firms in Virginia and has extensive experience and expertise in a review and consulting capacity on PPEA projects. Their role will be to support the requirements of K&CC on any legal-specific issues or questions that may need to be addressed throughout the process. They also have long-served as S.B. Ballard's primary counsel. S.B. Ballard enjoys a long and successful history of working together with their firm and knows that no other legal counsel in Virginia meets their level of PPEA experience and expertise.

#### **Key Benefits to Wise County Public Schools & Wise County**

Several of the more notable benefits to be derived from the S.B. Ballard /RRMM/Maxim proposal include the following:

- ***Guaranteed Occupancy.*** S.B. Ballard will guarantee that the project will be completed on or before December 31, 2013 if Wise County Public Schools expeditiously issues an award to our team.
- ***Guaranteed Pricing.*** S.B. Ballard will guarantee the pricing stipulated in our proposed price dated September 23, 2011.
- ***Exceptional Design/Build Team.*** S.B. Ballard has earned its reputation as a contractor of excellence on educational projects. Over 50% of our annual volume is educational facilities, while historically 85% of our work is with extremely satisfied repeat clients. RRMM is *the* outstanding public school design firm in the Commonwealth, with a resume including over 200 public schools in Virginia, many of which are award-winning applications. Maxim Engineering provides unique local knowledge coupled with a proven track record of successful involvement on many of the region's largest and most complex civil projects.
- ***Reduced Design Risk.*** Under this scenario the risks involved with design and document deficiencies are completely assumed by the S.B. Ballard /RRMM/Maxim team, not Wise County Public Schools. Your occupancy date and final price are assured before the design is completed.

- ***Community Outreach.*** The S.B. Ballard /RRMM/Maxim team understands the necessity and benefits of involving, informing and developing strong working relationships with the residents of Wise County. The majority of our work has been in heavily populated urban environments where success can only be achieved through consideration and cooperation with the local jurisdictions and residents. We will be your partner in working with the people of Wise County, and a good neighbor that meets its commitments and keeps its promises.
- ***Lower Cost.*** By awarding both schools included in our proposal, Wise County Public Schools gain tremendous economies of scale as well as benefits from the most competitive construction marketplace seen in the past 80 years. This simultaneous award process allows S.B. Ballard the ability to do the same with the subcontractor community, while they in turn gain the same benefit with their own suppliers. The County gets the highest quality schools delivered over the next 2+ years, at today's deflated pricing.
- ***Financing Assistance.*** To avoid delays, S.B. Ballard has included an amount in their proposed budget that is sufficient to cover the design development and pre-construction costs associated with the project until these expenditures can be paid through the first progress payment for the project's construction.
- ***Expedient Design Process.*** The S.B. Ballard /RRMM/Maxim team is ready to start the design process immediately, and proposes that the initial Design Program Charrettes commence as soon as Wise County Public Schools has provided a Memorandum of Agreement to move forward on this project with us.
- ***An Exceptional Local Business Plan.*** Our innovative and aggressive program to maximize the participation of existing local Wise County businesses, which is described in greater detail in our proposal, will generate the highest possible levels of participation by talented local businesses. This plan, which will combine public meetings to generate response and interest, education and training sessions in public sector contracting requirements, custom-tailored scopes of work, and practical-sized bid packages, will have the affect of opening-up a greater proportion of the work on this project than any other inclusion program we are aware of anywhere else.
- ***Long Term Economic Growth.*** Wise County's commitment to the future well-being of their school system will translate into a higher level of confidence and optimism among its citizens, including the business community, and should generate increased private development and an expansion of the tax base.
- ***Energy-Efficiency.*** Drawing on the exceptional experience acquired by the management teams at S.B. Ballard, RRMM and Maxim, on the design and construction of energy-efficient and sustainable facilities, our proposal includes all costs required to complete the two new school facilities to reflect this accumulated expertise. Although we have not included the additional design fees required to achieve LEED certification, many of the same high standards of design and exceptional construction applications



required for this certification are included in our pricing. The new S.B. Ballard /RRMM/Maxim-built school facilities will be extremely inexpensive to operate on an annual basis and will have an exceptionally high useful life-cycle.

- ***Building Information Modeling System (BIM).*** Using this innovative technology, all mechanical and electric systems will be fully integrated and monitorable. The facilities management and maintenance staff will be able to review the condition, monitor the performance, troubleshoot any problems and schedule routine maintenance activities on every major mechanical and electrical system component throughout the entire project. This cutting-edge system fully integrates the construction plans, specifications, cut sheets, service manuals, and maintenance schedules into one easy to access and use program that dramatically minimizes the time and effort usually spent to determine a defect, while eliminating errors on the part of those charged to maintain the facilities.

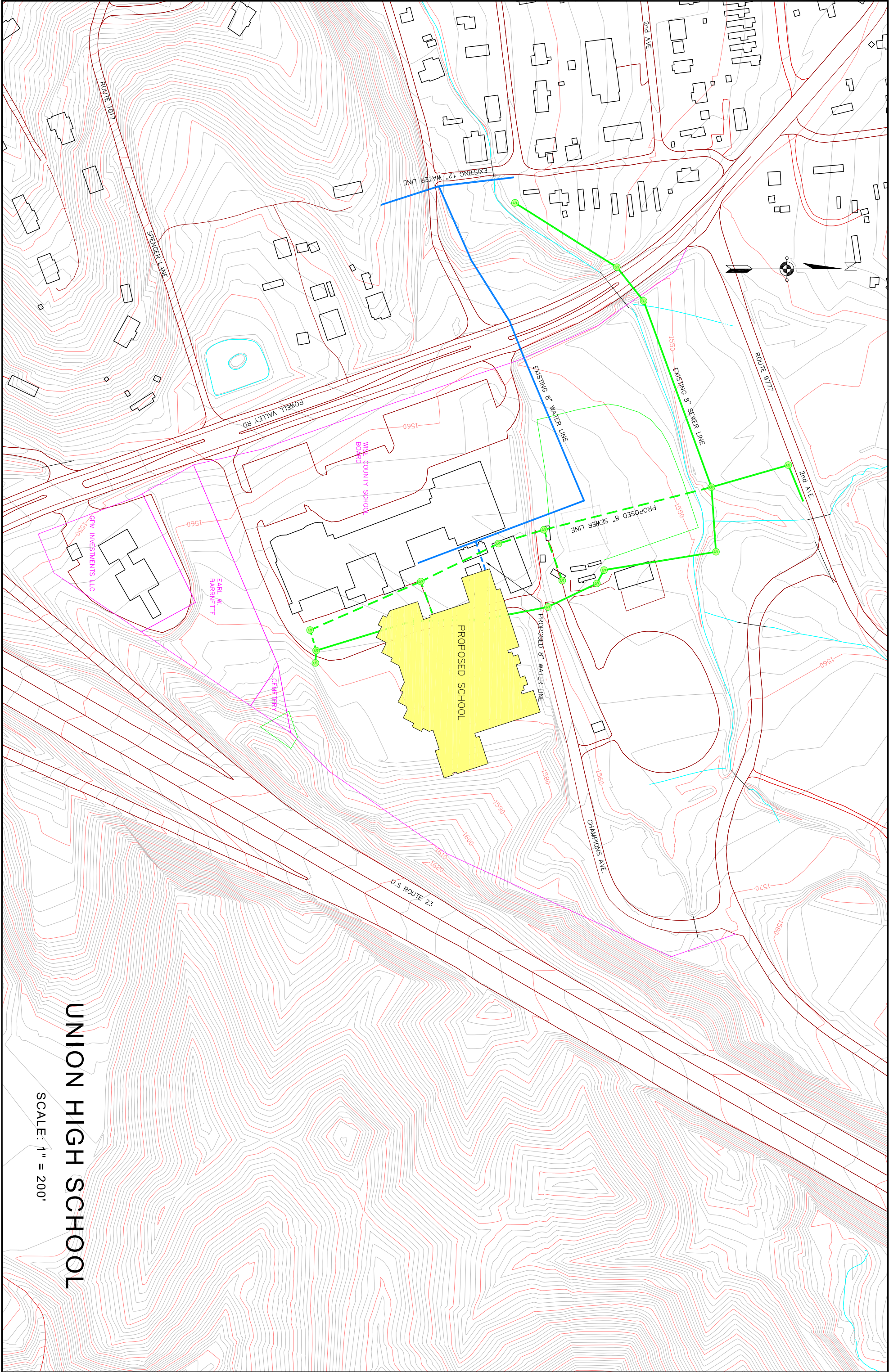
1. Topographical Maps
2. Public Utility Comments
3. Plans for Development
4. Plans for Securing Property
5. Firms Providing Guarantees & Warranties
6. Total Life-Cycle Cost Analysis
7. Assumptions about User Fees
8. Government Support or Opposition
9. Consistency with Comprehensive Plans
10. Impact of Board's Comprehensive Plans
11. Known Conflicts of Interest
12. Performance Evaluation System
13. Additional Information
  - A. Project Description – Revised 9.23.11 - **Proprietary/Confidential**
  - B. Preliminary Design Plans - Revised 9.23.11 - **Proprietary/Confidential**
  - C. Proposed Pricing – Revised 9.23.11 – **Proprietary/Confidential**
  - D. Responses to the M.B. Kahn Initial Proposal Review Dated 8.31.11  
Revised 9.23.11 – **Proprietary/Confidential**



**1. A topographical map (1:2,000 or other appropriate scale) depicting the location of the proposed project.**

The proposed schools, as well as entrances, drive lanes, on-site parking areas, utilities, and stormwater treatment areas are depicted on the attached 1" = 100' topographical maps for each of the four (4) proposed locations.

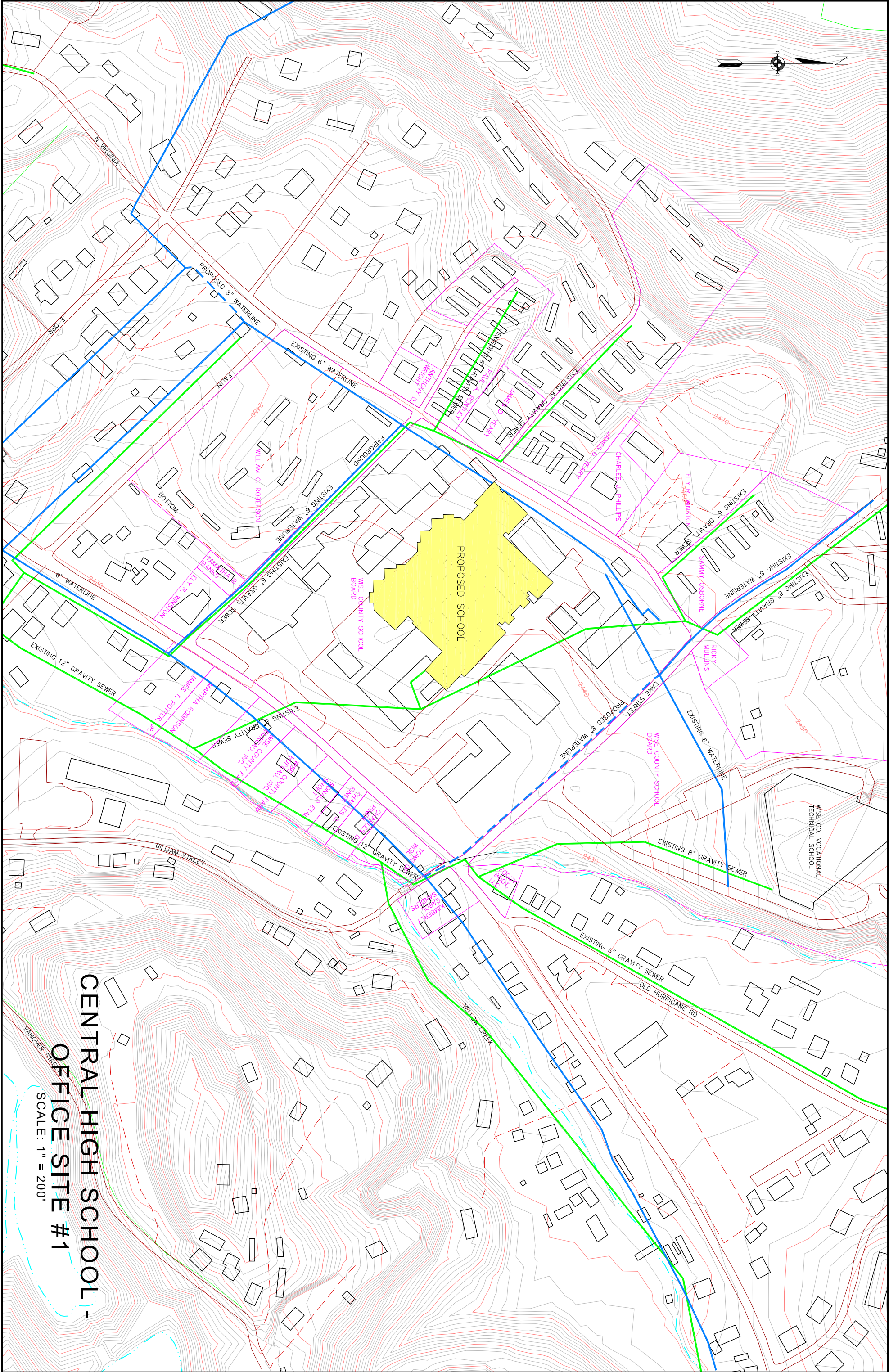
Please see the Site Narrative for each of the four (4) locations in 13.a – Project Description.



# UNION HIGH SCHOOL

SCALE: 1" = 200'





CENTRAL HIGH SCHOOL -

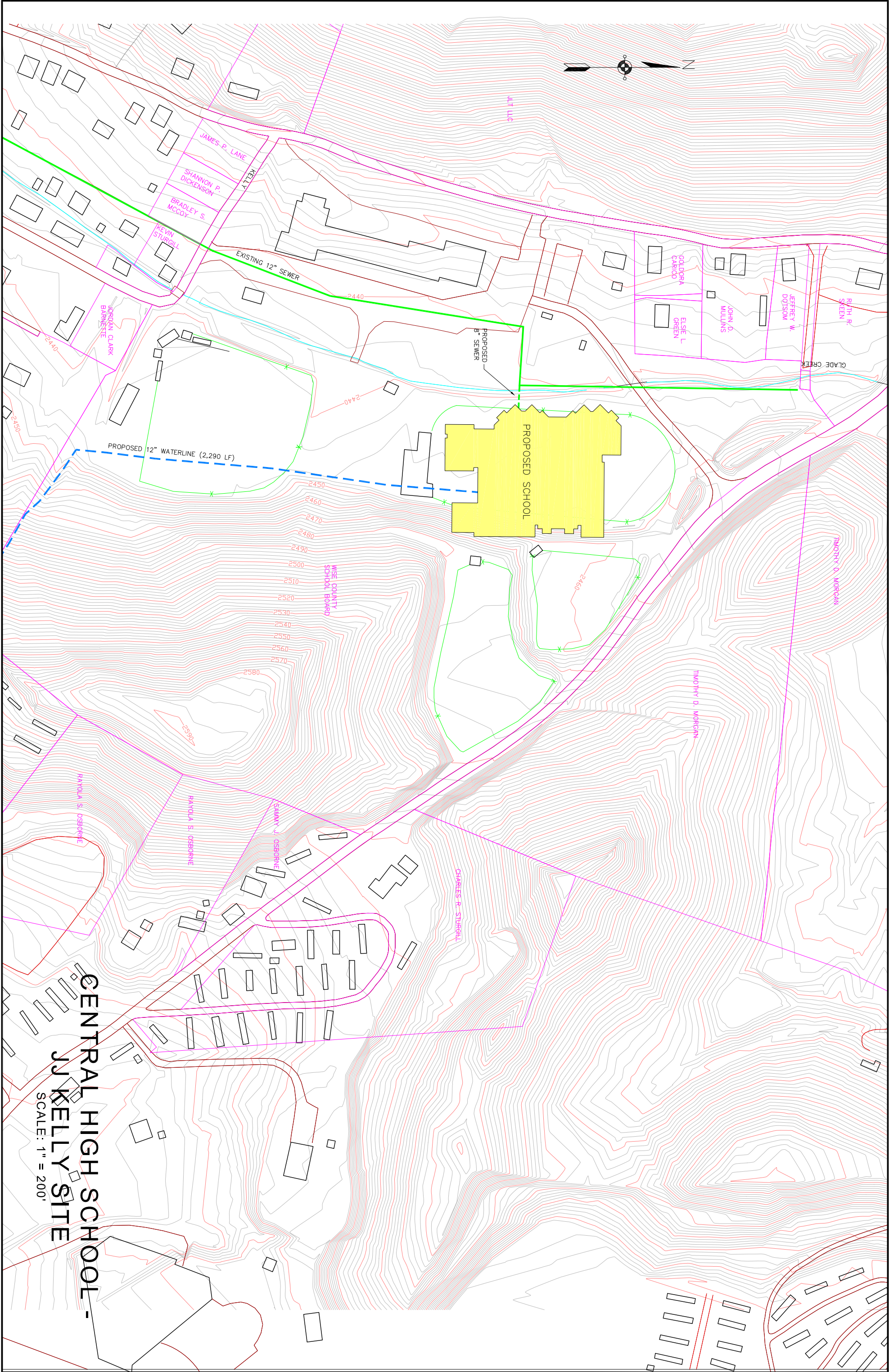
OFFICE SITE #1

SCALE: 1" = 200'









CENTRAL HIGH SCHOOL -  
JJ KELLY SITE  
SCALE: 1" = 200'



**2. A list of public utility facilities, if any, that will be crossed by the qualifying project and a statement of the plans of the proposer to accommodate such crossings.**

Extreme care will be taken throughout the entire course of the project to assure that there are no unnecessary interruptions of utility services. ‘Miss Utility’ will be contacted during the initial site design and again prior to any construction activities near existing utility lines to ascertain and verify the location of all utilities. Locations will be marked in the field, documented in the design documents, and be incorporated into the ‘as-built’ documents to be turned over to WCPS at project completion.

Electricity at all four potential sites under consideration is provided by Old Dominion Power Company, a subsidiary of Kentucky Utilities. Telephone service at all four sites is provided by Verizon. We will initiate communication with these firms very early in the design process and coordinate all requirements with their service distribution departments. The most effective ways to provide these services to the two new schools will be determined and implemented. In addition, plans will be drafted to assure that there are minimum disruptions or adverse service impacts to the surrounding neighborhood residents. All planned and required disruptions will be coordinated with those who might be impacted by these activities well in advance of any temporary cessation of service and sufficient notice will be provided so that there are no unwelcome surprises. Any outages will be infrequent, coordinated with those impacted, and of short duration.

Water and sanitary sewer services for Union High School is now and will continue to be provided by the Town of Big Stone Gap, Virginia. We will work with the town engineer and the town manager during the initial design stage and provide ample advance notice to them of any construction activities in close proximity to their service lines and appurtenances.

Similar coordination activities will be taken with the Town of Wise, Virginia which is the service provider of water and sanitary sewer to any of the three (3) separate potential sites under consideration. For both school locations, if necessary, temporary measures will be taken during construction to pump sewer lines from upper elevation manholes above construction activities to lower elevation manholes below the impacted areas. Temporary water bypass connections and lines will be made when necessary to ensure continued water service to all users.

There are no known natural gas wells or transmission lines within a serviceable range of Union High School, though this service may be available for all three of the potential Central High School sites. A gas line belonging to Glasmorgan Natural Gas Company, LLC crosses Birchfield Road approximately 1,230 feet north of the intersection of Birchfield Road and Lake Street. Our recommendation is that the County consider extending a 4-inch natural gas line south to the JJ Kelly site or south to Lake Street and east to one or the other of the Central Office sites. Mr. Monroe Robinette, Managing Member of Glasmorgan Natural Gas has been contacted and has indicated a willingness to serve the new Central High School and has confirmed capacity and back-up suppliers for this service.

**3. Information relating to the current plans for development of the facilities to be used by a public entity that are similar to the qualifying project being proposed by the private entity; if any, of each affected jurisdiction.**

No response required per notification from MB Kahn dated 9.12.11.

**4. A statement and strategy setting out the plans for securing all necessary property and/or easements. The statement must include the names and addresses, if known, of the current owners of the property as well as a list of any property the proposed intends to request the Board or affected jurisdiction to condemn.**

The various sites under consideration at the existing Union High School location in Big Stone Gap, the existing Central High School (JJ Kelly) location in Wise, and Central Office Site # 1 (Education Center) are all presently owned by Wise County Public Schools.

Central Office Site # 2 does contain two adverse property tracts that would need to be procured.

One belongs to Frederick M. Collier, P.O. Box 2872, Wise, Virginia 24293.

The other belongs to Ricky Mullins, P.O. Box 758, Wise, Virginia 24923.

Communications have already been established with both principals, and both have indicated a willingness to sell. Therefore, no condemnation actions are anticipated should this site be selected by WCPS.



**5. A detailed listing of all firms, along with their relevant experience and abilities, that will provide specific design, construction and completion guarantees and warranties along with a record of any prior defaults for performance.**

S.B. Ballard Construction Company will provide 100% Payment & Performance Bonds for the entire value of our proposal to Wise County Public Schools.

RRMM Architects will provide Errors and Omissions coverage for all building design-related activities for their own and all associate engineering consultant firms.

Maxim Engineering will provide Errors and Omissions coverage for all civil design-related activities for this portion of the work.

S.B. Ballard, as the Construction Manager, will hold all responsibility and will be the sole source of contact for any warranty matters on any applications throughout the project.

In 33 years of business, S.B. Ballard Construction Company has **never** missed a date for beneficial occupancy by a client.

**6. A total life-cycle cost, including maintenance, specifying methodology and assumptions of the project or projects including major building systems (e.g., electrical, mechanical, etc.) and the proposed project start date. Include anticipated commitment of all parties; equity, debt, and other financing mechanisms; and a schedule of project revenues and project costs. The life-cycle cost analysis should include, but not be limited to, a detailed analysis of the projected return, rate of return, expected useful life of the facility and estimated annual operating expenses using Board adopted service levels and standards**

The Union and Central High School facilities envisioned by the S.B. Ballard/RRMM/Maxim team are designed to incorporate the very highest levels of quality and energy-efficiency available in the industry today that are consistent with the budgetary requirements of Wise County Public Schools. Our goal, which we believe we have achieved, is to provide modern, world-class schools with an expected overall life cycle than can reasonably be anticipated to range between 50 and 70 years. Many specific examples of this overall approach of our team have been outlined in our Executive Summary and are continued in greater detail in Section 13.a of this proposal.

We understand and acknowledge that the final facilities design is still very much a work in progress, and as such, we have primarily limited our response in this section of our proposal to the directly related energy analysis comments attached. The reason for this is simple: as the design changes and evolves, so will the Life-Cycle Cost Analysis. There are many design modifications that will either improve or diminish the overall ratings and durability of any specific system applications, but that will likely be offset by changes in other areas.

If our team is selected to design and construct your facilities, we will work with you in a continuous manner to advise WCPS of the potential benefits or drawbacks to be realized to the life-cycle cost basis on the schools. When the design has been finalized to the point that further modifications will have little impact on the final LCCA, we will commission a full and final report that correctly and accurately reflects your precise anticipated expenditures for all categories, as well as the range of reasonable use factors for every selected system and application in your new schools.

On the following pages we have presented comparative report summaries, as well as back-up data that can be reviewed for either primary system application. The first summary is contingent on the use of electricity as the primary fuel source, while the second utilizes natural gas as the primary source. We have had several discussions with both Old Dominion Power Company and Glamorgan Natural Gas Company. We know from our conversations with Old Dominion that the electrical capacity required for your new facility is readily available and is accessible to any of your potential sites from several different directions. We are also able to utilize an exact cost factor per KWH to a high degree of certainty.

We have also had discussions with Mr. Robinette of Glamorgan Natural Gas Company, and while there is no evidence of any availability of natural gas to service Union High School, we have determined that a 4" supply line owned and operated by the company can be accessed approximately 1,230 feet north of the intersection of Birchfield Road and Lake Street in the Town of Wise. Should the County elect to do so, the line could be routed along Lake Street to provide natural gas to any of the three locations under consideration for Central High School. However, we must still complete our due diligence on the capacity and reliability of this alternate fuel source, as

well as establish a firm unit price to be able to make a recommendation for its use at the present time. Please see our recommendations on fuel-source and equipment type at the end of this summation.

For our initial construction costs determination we have assumed that the facilities will require electricity-fueled HVAC equipment.

### **HVAC System Economic Analysis**

Three (3) heating, ventilating, and air conditioning (HVAC) systems were selected for Life Cycle Cost Analysis (LCCA) for the subject project. Each system provides the temperature, humidity, and indoor air quality conditions consistent with the recommended baseline and alternatives as indicated in Chapter 6, Educational Facilities, of the American Society of Heating, Refrigeration and Air Conditioning Engineers, Inc. (ASHRAE) 2007 HVAC Applications Handbook and the Owner's Project Requirements (OPR). It should be noted that in each option, improvements in system efficiencies may be gained through the use of ultra-high efficiency equipment and modifications to the baseline energy control strategies. However, as all are different from alternative to alternative, said improvements are not part of the study in order to provide the Owner a baseline comparison of each system alternative.

Each system provides individual space temperature control and was modeled to meet the ASHRAE Standard 55 Human Comfort and the ASHRAE Standard 62 Indoor Air Quality requirements for schools. In addition, each system has the ability to heat and cool simultaneously which provides superior temperature and humidity control.

The study considers initial first cost of construction, utility cost associated with running the systems, maintenance costs to keep the systems at peak performance, and replacement cost within the 20 year study period. Cost for utilities to the site, such as natural gas, electric power, etc. are not part of the computed LCCA. However, said costs are incorporated into the final analysis and recommendations. Baseline average cost data for operations, maintenance, and energy management data is based on ASHRAE 2007 HVAC Applications Chapters 25 and 36 respectively. Operational and maintenance cost data was augmented by actual cost data from several local school districts rather than simply relying on national averages.

The following is a description of each system and features included in the study:

**System 1:** Four pipe chilled water and electric hot water boiler system. 42°F chilled water is produced by multi stage centrifugal chillers with variable speed drives for optimum capacity control and part load performance. Heat is rejected from the buildings by variable fan speed cooling towers connected to the chillers. 180° F hot water is produced by conventional **resistance electric heat** boilers.

Variable flow chilled water is distributed from the chillers to air handling equipment throughout the building. Only the amount of water required to meet the cooling demand is circulated to the air handling equipment and through the chillers reducing pump energy and enhancing part load performance at the chillers.

Primary/secondary hot water pumps circulate heating water through the boilers and to the air handling equipment. Again, only the amount of water required to meet the heating demand is circulated to the air handling equipment.

Variable air volume (VAV) air handling units serving areas including classrooms, administrative offices, media centers and similar spaces deliver cooled and dehumidified primary air to each space. The air handling units also introduce fresh outside air into the buildings after cooling, dehumidifying, or heating as required. The primary air is delivered to series fan powered VAV terminal units. The terminal unit modulates the amount of cooled primary air delivered as required to meet the cooling demand of the space. If heating is required, the terminal unit modulates the primary air as required to meet the minimum ventilation requirements. Once the primary air is at its minimum, and heating is still required, the terminal unit's hot water coil is activated and heat is added to satisfy the heating requirement of the space.

Constant volume air handling units serve the large spaces including Gymnasiums, Auditoriums, and Cafeterias. These units heat, cool, and dehumidify the air as required to condition the space. In addition, fresh outside air is introduced into the buildings through these units.

All of the air handling units that require significant amounts of outside air utilize total energy recovery wheels to precondition the incoming outside air with air being exhausted to atmosphere.

**System 2:** Packaged rooftop heating and air conditioning units. Variable air volume (VAV) packaged rooftop units serving areas including classrooms, administrative offices, media centers, and similar space deliver cooled and dehumidified primary air to each space. Cooling is accomplished with self-contained refrigerant systems within each rooftop unit consisting of compressors, evaporator coils, and condenser coils and fans. Pre-heating the supply air and reheat of terminal unit air is accomplished with electric heating coils.

The rooftop units also introduce fresh outside air into the buildings after cooling, dehumidifying, or heating as required. The primary air is delivered to series fan powered VAV terminal units. The terminal unit modulates the amount of cooled primary air delivered as required to meet the cooling demand of the space. If heating is required, the terminal unit modulates the primary air as required to meet the minimum ventilation requirements. Once the primary air is at its minimum, and heating is still required, the terminal unit's electric coil is activated and heat is added to satisfy the heating requirement of the space.

Constant volume packaged rooftop units serve the large spaces including Gymnasiums, Auditoriums, and Cafeterias. These units heat with electric heat, cool, and dehumidify the air as required to condition the space. In addition, fresh outside air is introduced into the buildings through these units.

All of the rooftop units with significant amounts of outside air requirements utilize total energy recovery wheels to precondition the incoming outside air with air being exhausted to the atmosphere.

**System 3:** Four pipe chilled water and natural gas hot water boiler system. 42°F chilled water is produced by multi stage centrifugal chillers with variable speed drives for optimum capacity

control and part load performance. Heat is rejected from the buildings by variable fan speed cooling towers connected to the chillers. 180° F hot water is produced by conventional **natural gas fired** boilers.

Variable flow chilled water is distributed from the chillers to air handling equipment throughout the building. Only the amount of water required to meet the cooling demand is circulated to the air handling equipment and through the chillers reducing pump energy and enhancing part load performance at the chillers.

Primary/secondary hot water pumps circulate heating water through the boilers and to the air handling equipment. Again, only the amount of water required to meet the heating demand is circulated to the air handling equipment.

Variable air volume (VAV) air handling units serving areas including classrooms, administrative offices, media centers and similar spaces deliver cooled and dehumidified primary air to each space. The air handling units also introduce fresh outside air into the buildings after cooling, dehumidifying, or heating as required. The primary air is delivered to series fan powered VAV terminal units. The terminal unit modulates the amount of cooled primary air delivered as required to meet the cooling demand of the space. If heating is required, the terminal unit modulates the primary air as required to meet the minimum ventilation requirements. Once the primary air is at its minimum, and heating is still required, the terminal unit's hot water coil is activated and heat is added to satisfy the heating requirement of the space.

Constant volume air handling units serve the large spaces including Gymnasiums, Auditoriums, and Cafeterias. These units heat, cool, and dehumidify the air as required to condition the space. In addition, fresh outside air is introduced into the buildings through these units.

All of the air handling units that require significant amounts of outside air utilize total energy recovery wheels to precondition the incoming outside air with air being exhausted to atmosphere.

### **Results and Recommendations**

Our proposal is based on the comparison of System 2 (Packaged rooftop heating and air conditioning units) to either System 1 or System 3 - Four pipe chilled water system with variable speed drives for optimum capacity control and part load performance, hot water heat (electric or gas respectively) and Variable Air Volume (VAV) air handling is the recommended system for the subject project.

System 2 provides very good temperature and humidity control and bests all alternatives with regard to environmental impact (important for obtaining GREEN Building status) and cost of ownership. System 2 also requires the second lowest investment in capital of all the alternatives selected for review. Taking into consideration that System 3 requires installing a natural gas utility line to the site and both Systems 1 and 3 require an extensive network of heating hot water piping and controls, which increase first cost and the maintenance cost of ownership, System 2 appears to be the most cost effective solution for Wise County.



## BUILDING DESCRIPTION

	Alternative 1	Alternative 2
Alternative Description	4 pipe AHU, elect hw heat, water cooled sc	Package RTU Dx cooling with electric heat
Building Name	Finger School	Finger School
Floor Area	121,100 ft2	121,100 ft2
Max Building Cooling Load	324 tons	324 tons
Max Building Heating Load	2,699 mbh	2,699 mbh
System Set 1	FPVAV - Parallel (100,640 cfm)	FPVAV - Parallel (100,640 cfm)
Cooling Plant 1 (#1)	Hi-eff helical rotary (162 tons)	Large Commercial (324 tons)
Cooling Plant 1 (#2)	Hi-eff helical rotary (162 tons)	
Heating Plant	Electric (2,699 mbh)	Electric (2,699 mbh)
Building Cooling Coil load	135,065 ton-hrs/year	135,065 ton-hrs/year
Building Heating Coil load	1,606,441 kBtu/year	1,606,441 kBtu/year
Building Energy Usage	37,648 Btu/(ft2-year)	38,418 Btu/(ft2-year)
Building Energy (Utility) Cost	1.1777 \$/(ft2-year)	1.2040 \$/(ft2-year)

	Alternative 3
Alternative Description	4 pipe AHU, GAS hw heat, water cooled
Building Name	Finger School
Floor Area	121,100 ft2
Max Building Cooling Load	324 tons
Max Building Heating Load	2,699 mbh
System Set 1	FPVAV - Parallel (100,640 cfm)
Cooling Plant 1 (#1)	Hi-eff helical rotary (162 tons)
Cooling Plant 1 (#2)	Hi-eff helical rotary (162 tons)
Heating Plant	Gas Fired (2,699 mbh)
Building Cooling Coil load	135,065 ton-hrs/year
Building Heating Coil load	1,606,441 kBtu/year
Building Energy Usage	45,273 Btu/(ft2-year)

## LIFE CYCLE COST ANALYSIS

	Alt 1 - 2	Alt 3 - 2
Building Energy (Utility) Cost		
Internal Rate of Return	<= 0	6.0%
Life Cycle Cost Difference	\$-611,802	\$-216,652
Life Cycle payback on Investment	> 20.0 yrs	> 20.0 yrs
Simple Payback on Investment	169.8 yrs	17.3 yrs

## ENVIRONMENTAL IMPACT ANALYSIS

	Alt 1 - 2	Alt 3 - 2
CO2 Impact ( - denotes Reduction)	-43,717 lbm/year	-490,160 lbm/year
SO2 Impact ( - denotes Reduction)	-224,051 gm/year	-3,976,262 gm/year
NOX Impact ( - denotes reduction)	-71,041 gm/year	-1,125,770 gm/year

## INPUTS TO ENERGY STAR BUILDING LABEL BENCHMARKING TOOL

Alternative	1	2	3
City	Roanoke, VA	Roanoke, VA	Roanoke, VA
Building Area	121,100 ft2	121,100 ft2	121,100 ft2
Weekly Operating Hours	49	49	49
Number of Occupants	1,615	1,615	1,615
Number of PC's Per Occupant	User Defined	User Defined	User Defined
Annual Electric Consumption	1,299,153 kWh	1,326,476 kWh	841,484 kWh
Annual Gas Consumption	1,252 therms	1,252 therms	26,106 therm
Annual Oil Consumption	0 therms	0 therms	0 therms
Annual Steam Consumption	0 therms	0 therms	0 therms

## BUILDING DESCRIPTION

Description	Alt 1: 4 pipe AHU, elect hw heat, w.	Alt 2: Package RTU Dx cooling with	Alt 3: 4 pipe AHU, GAS hw heat, w.
Building Name	Block School	Block School	Block School
Orientation	North	North	North
Floor Area	121,100 ft2	121,100 ft2	121,100 ft2
Wall Area	25,104 ft2	25,104 ft2	25,104 ft2
Glass Area	7,531 ft2	7,531 ft2	7,531 ft2
Roof Area	60,550 ft2	60,550 ft2	60,550 ft2
Skylight Area	0 ft2	0 ft2	0 ft2
Lighting Demand	302.75 kW	302.75 kW	302.75 kW
Misc Equip Demand	60.55 kW	60.55 kW	60.55 kW
Base Utility Demand #1	0.00 mbh	0.00 mbh	0.00 mbh
Base Utility Demand #2	83.96 mbh	83.96 mbh	83.96 mbh

## ZONE PARAMETERS

	Alt 1: 4 pipe AHU, elect hw heat, w.	Alt 2: Package RTU Dx cooling with	Alt 3: 4 pipe AHU, GAS hw heat, w.
Building Name	Main Building	Main Building	Main Building
Served by	System 1	System 1	System 1
Occup Clg Setpoint	75 deg F	75 deg F	75 deg F
Occup Htg Setpoint	72 deg F	72 deg F	72 deg F
Unoccup Htg Setpoint	60 deg F	60 deg F	60 deg F
Unoccup Clg Setpoint	90 deg F	90 deg F	90 deg F
Number of People	1615	1615	1615
Ventilation Rate	15 cfm/pers	15 cfm/pers	15 cfm/pers

## AIRSIDE SYSTEM

	Alt 1: 4 pipe AHU, elect hw heat, w.	Alt 2: Package RTU Dx cooling with	Alt 3: 4 pipe AHU, GAS hw heat, w.
System 1	FPVAV - Parallel	FPVAV - Parallel	FPVAV - Parallel
Served by	Equipment Plant 1	Equipment Plant 1	Equipment Plant 1
Supply Air Cooling DB	55.0 deg F	55.0 deg F	55.0 deg F
Supply Air Heating DB	125.0 deg F	125.0 deg F	125.0 deg F
Ventilation	24,220 cfm = 24.1 %	24,220 cfm = 24.1 %	24,220 cfm = 24.1 %
VAV Minimum Airflow	30 %	30 %	30 %
Supply Fan	FC w/ Var Speed Drive Critical Zt	FC w/ Var Speed Drive Critical Zt	FC w/ Var Speed Drive Critical Zt
Fan Type	Centrifugal	Centrifugal	Centrifugal
Design Airflow	100,640 cfm	100,640 cfm	100,640 cfm
Fan Static	3.0 in H2O	3.0 in H2O	3.0 in H2O
Energy Rate	141.3 kW	141.3 kW	141.3 kW
Exhaust Fan	FC w/ Var Speed Drive	FC w/ Var Speed Drive	FC w/ Var Speed Drive
Fan Type	Centrifugal	Centrifugal	Centrifugal
Design Airflow	25,817 cfm	25,817 cfm	25,817 cfm
Fan Static	2.0 in H2O	2.0 in H2O	2.0 in H2O
Energy Rate	24.2 kW	24.2 kW	24.2 kW
Heating Fan	FP Unit Ventilator	FP Unit Ventilator	FP Unit Ventilator
Fan Type	None	None	None
Design Airflow	22,187 cfm	22,187 cfm	22,187 cfm
Fan Static	0.5 in H2O	0.5 in H2O	0.5 in H2O
Energy Rate	8.2 kW	8.2 kW	8.2 kW

## COOLING / HEATING EQUIP

		Alt 1: 4 pipe AHU, elect hw heat, w/	Alt 2: Package RTU Dx cooling with	Alt 3: 4 pipe AHU, GAS hw heat, w/
Cooling Plant 1		2 Parallel Chillers w/ 2 Pumps	Air-Cooled Rooftop Units	2 Parallel Chillers w/ 2 Pumps
Clg Ref 1 Equip Name	Hi-eff helical rotary		Large Commercial	Hi-eff helical rotary
Equip Type	Helical-Rotary		Rooftop Units	Helical-Rotary
Cooling Capacity	162 tons		324 tons	162 tons
Full Load Rate	0.582 kW/ton		12.100 EER	0.582 kW/ton
100\50% Load Points	94 kW\54 kW		321 kW\199 kW	94 kW\54 kW
Chw Pump F.L. Rate	125 ft H2O = 13.6 kW		Not Defined	125 ft H2O = 13.6 kW
Cond Pump F.L. Rate	75 ft H2O = 9.5 kW		Not Defined	75 ft H2O = 9.5 kW
Chiller-Tower Optimization	Yes		No	Yes
Cond/Twr Fan E. Rate	0.066 kW/ton = 12.5 kW		0.084 kW/ton = 34.9 kW	0.066 kW/ton = 12.5 kW
Auxiliary F.L. Rate	Not Defined		Not Defined	Not Defined
Fuel Source	Elec Utility		Elec Utility	Elec Utility
Chilled Water DeltaT	10.0 F		Not Defined	10.0 F
Cond Water DeltaT	10.0 F		Not Defined	10.0 F
Cond Operating Minimum	65.0 F		75.0 F	65.0 F
Condenser Entering Temp	85.0 F		95.0 F	85.0 F
Load Shedding Economizer	No		Not Defined	No
Heat Recovery Capability	No		Not Defined	No
Evaporative Precooling	Not Defined		No	Not Defined
Clg Ref 2 Equip Name	Hi-eff helical rotary	Not Defined		Hi-eff helical rotary
Equip Type	Helical-Rotary	Not Defined		Helical-Rotary
Cooling Capacity	162 tons	Not Defined		162 tons
Full Load Rate	0.582 kW/ton	Not Defined		0.582 kW/ton
100\50% Load Points	94 kW\54 kW	Not Defined		94 kW\54 kW
Chw Pump F.L. Rate	125 ft H2O = 13.6 kW	Not Defined		125 ft H2O = 13.6 kW
Cond Pump F.L. Rate	75 ft H2O = 9.5 kW	Not Defined		75 ft H2O = 9.5 kW
Chiller-Tower Optimization	Yes	Not Defined		Yes
Cond/Twr Fan E. Rate	0.066 kW/ton = 12.5 kW	Not Defined		0.066 kW/ton = 12.5 kW
Auxiliary F.L. Rate	Not Defined	Not Defined		Not Defined
Fuel Source	Elec Utility	Not Defined		Elec Utility
Chilled Water DeltaT	10.0 F	Not Defined		10.0 F
Cond Water DeltaT	10.0 F	Not Defined		10.0 F
Cond Operating Minimum	65.0 F	Not Defined		65.0 F
Condenser Entering Temp	85.0 F	Not Defined		85.0 F
Load Shedding Economizer	No	Not Defined		No
Heat Recovery Capability	No	Not Defined		No
Other Cooling Plant Parameters				
Cooling Plant Schedule	Available all hours	Available all hours		Available all hours
Heating Plant	Elec	Elec		Gas
Heating Capacity	2,699 mbh	2,699 mbh		2,699 mbh
Full Load Rate	100.00 %	100.00 %		80.00 %
100\50% Load Points	2,699 mbh\1,349 mbh	2,699 mbh\1,349 mbh		3,374 mbh\1,893 mbh
Hotw Pump F.L. Rate	15 ft H2O = 1.1 kW	Not Defined		15 ft H2O = 1.1 kW
Auxiliary F.L. Rate	Not Defined	Not Defined		0.002 kW/mbh = 5.4 kW

## UTILITY RATES

## Alternative 1

Old Dominion Power - Ky	Customer Charge: \$ 0	Demand Ratchet: 0 %	Summer Rate Period:	Jun - Sep
Utility Type	Rate Type	Summer Charge	Rate Type	Winter Charge
Elec Consumption	On Peak	\$ 0.059 /kWh	On Peak	\$ 0.024 /kWh
Elec Consumption	Off Peak	\$ 0.024 /kWh	Off Peak	\$ 0.024 /kWh
Elec Consumption	Mid Peak	\$ 0.055 /kWh	Mid Peak	\$ 0.000 /kWh
Elec Consumption	Sup Peak	\$ 0.000 /kWh	Sup Peak	\$ 0.000 /kWh
Elec Demand	On Peak	\$ 11.395 /kW	On Peak	\$ 11.395 /kW
Elec Demand	Off Peak	\$ 11.395 /kW	Off Peak	\$ 11.395 /kW
Elec Demand	Mid Peak	\$ 0.000 /kW	Mid Peak	\$ 0.000 /kW
Elec Demand	Sup Peak	\$ 0.000 /kW	Sup Peak	\$ 0.000 /kW

	Summer Rate	Winter Rate
Gas Consumption	\$ 0.650 /therm	\$ 0.650 /therm
Coal Consumption	\$ 0.000 /m3	\$ 186.500 /m3

Alternative 2 Same As Alternative 1

Alternative 3 Same As Alternative 1



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 MAXIMUM BUILDING LOADS
 

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Weather File Name: Roanoke, VA  
 Latitude: 37 deg  
 Longitude: 80 deg  
 Summer Design Dry Bulb 91.0 deg F  
 Summer Design Wet Bulb 74.0 deg F  
 Winter Design Dry Bulb: 16.0 deg F

## Alt 1: 4 pipe AHU, elect hw heat, water

Load Component	Cooling Design (Btuh)	Percent	Heating Design (Btuh)	Percent
Roof Conduction	236,754	6.09	-237,356	8.79
Glass Solar	356,422	9.17	0	0
Glass Conduction	72,300	1.86	-266,338	9.87
Wall Conduction	39,958	1.03	-107,264	3.97
Infiltration	29,424	0.76	-95,310	3.53
Lights	1,033,286	26.58	0	0
People	645,867	16.62	0	0
Miscellaneous	206,657	5.32	0	0
Ventilation	1,098,903	28.27	-1,445,647	53.56
Fan Heat	214,700	5.52	0	0
Exhaust Heat	-47,275	-1.22	0	0.00
Reheat	0	0	-547,070	20.27
User Oversizing	0	0.00	0	0.00
Grand Totals	3,886,995	100.00	-2,698,985	100.00
Maximum Cooling Load	324 tons			
Maximum Heating Load	2,699 mbh			

## Alt 2: Package RTU Dx cooling with ele

Load Component	Cooling Design (Btuh)	Percent	Heating Design (Btuh)	Percent
Roof Conduction	236,754	6.09	-237,356	8.79
Glass Solar	356,422	9.17	0	0
Glass Conduction	72,300	1.86	-266,338	9.87
Wall Conduction	39,958	1.03	-107,264	3.97
Infiltration	29,424	0.76	-95,310	3.53
Lights	1,033,286	26.58	0	0
People	645,867	16.62	0	0
Miscellaneous	206,657	5.32	0	0
Ventilation	1,098,903	28.27	-1,445,647	53.56
Fan Heat	214,700	5.52	0	0
Exhaust Heat	-47,275	-1.22	0	0.00
Reheat	0	0	-547,070	20.27
User Oversizing	0	0.00	0	0.00
Grand Totals	3,886,995	100.00	-2,698,985	100.00
Maximum Cooling Load	324 tons			
Maximum Heating Load	2,699 mbh			

## Alt 3: 4 pipe AHU, GAS hw heat, water

Load Component	Cooling Design (Btuh)	Percent	Heating Design (Btuh)	Percent
Roof Conduction	236,754	6.09	-237,356	8.79
Glass Solar	356,422	9.17	0	0
Glass Conduction	72,300	1.86	-266,338	9.87
Wall Conduction	39,958	1.03	-107,264	3.97
Infiltration	29,424	0.76	-95,310	3.53
Lights	1,033,286	26.58	0	0
People	645,867	16.62	0	0
Miscellaneous	206,657	5.32	0	0
Ventilation	1,098,903	28.27	-1,445,647	53.56
Fan Heat	214,700	5.52	0	0

Exhaust Heat	-47,275	-1.22	0	0.00
Reheat	0	0	-547,070	20.27
User Oversizing	0	0.00	0	0.00
Grand Totals	3,886,995	100.00	-2,698,985	100.00
Maximum Cooling Load	324 tons			
Maximum Heating Load	2,699 mbh			

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 MONTHLY COIL LOADS
 

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## Alt 1: 4 pipe AHU, elec

	Cooling Coil Loads (ton-hrs)	Heating Coil Loads (kBtu)
Month		
Jan	1,703	250,025
Feb	1,521	216,100
Mar	3,685	187,589
Apr	6,692	104,985
May	26,393	31,565
Jun	19,562	85,177
Jul	18,311	79,393
Aug	20,170	101,582
Sep	24,456	31,924
Oct	5,841	148,272
Nov	4,406	171,470
Dec	2,325	198,357
Total	135,065	1,606,441

## Alt 2: Package RTU Dx c

	Cooling Coil Loads (ton-hrs)	Heating Coil Loads (kBtu)
Month		
Jan	1,703	250,025
Feb	1,521	216,100
Mar	3,685	187,589
Apr	6,692	104,985
May	26,393	31,565
Jun	19,562	85,177
Jul	18,311	79,393
Aug	20,170	101,582
Sep	24,456	31,924
Oct	5,841	148,272
Nov	4,406	171,470
Dec	2,325	198,357
Total	135,065	1,606,441

## Alt 3: 4 pipe AHU, GAS

	Cooling Coil Loads (ton-hrs)	Heating Coil Loads (kBtu)
Month		
Jan	1,703	250,025
Feb	1,521	216,100
Mar	3,685	187,589
Apr	6,692	104,985
May	26,393	31,565
Jun	19,562	85,177
Jul	18,311	79,393
Aug	20,170	101,582
Sep	24,456	31,924
Oct	5,841	148,272
Nov	4,406	171,470
Dec	2,325	198,357
Total	135,065	1,606,441



## SYSTEM LOAD PROFILE

## Alt 1: 4 pipe AHU, t

Percent Design Load	Clg Coil Capacity (tons)	Hours (%)	Hours	Htg Coil Capacity (Btuh)	Hours (%)	Hours	Clg Airflow Capacity (cfm)	Hours (%)	Hours	Htg Airflow Capacity (cfm)	Hours (%)	Hours
0	0.0	71.4	6,251	0	72.5	6,349	0	71.1	6,230	0	72.5	6,349
>0 - 5	16.2	9.7	850	134,949	1.8	160	5,032	0.0	0	1,109	0.9	82
5 - 10	32.4	4.1	355	269,899	4.8	418	10,064	0.0	0	2,219	1.0	87
10 - 15	48.6	2.0	172	404,848	1.0	91	15,096	0.0	0	3,328	1.4	122
15 - 20	64.8	1.7	149	539,797	1.0	87	20,128	0.0	0	4,437	3.3	287
20 - 25	81.0	3.5	304	674,746	10.4	915	25,160	0.0	0	5,547	0.3	23
25 - 30	97.2	3.4	297	809,696	3.3	288	30,192	21.4	1,872	6,656	0.8	68
30 - 35	113.4	0.5	42	944,645	0.7	58	35,224	1.4	127	7,765	0.5	44
35 - 40	129.6	1.2	107	1,079,594	1.2	104	40,256	1.5	129	8,875	0.5	43
40 - 45	145.8	1.7	149	1,214,543	0.2	19	45,288	0.3	23	9,984	2.2	192
45 - 50	162.0	0.0	0	1,349,493	0.2	21	50,320	1.2	107	11,093	11.5	1,009
50 - 55	178.2	0.0	0	1,484,442	0.2	21	55,352	0.2	20	12,203	0.5	41
55 - 60	194.3	0.0	0	1,619,391	0.5	43	60,384	0.2	20	13,312	0.7	59
60 - 65	210.5	0.3	22	1,754,340	0.5	42	65,416	0.7	64	14,421	0.7	61
65 - 70	226.7	0.5	42	1,889,290	0.7	61	70,448	0.7	62	15,531	0.2	21
70 - 75	242.9	0.2	20	2,024,239	0.0	0	75,480	0.3	22	16,640	0.0	0
75 - 80	259.1	0.0	0	2,159,188	0.3	23	80,512	0.0	0	17,749	0.3	22
80 - 85	275.3	0.0	0	2,294,137	0.2	20	85,544	0.0	0	18,859	0.0	0
85 - 90	291.5	0.0	0	2,429,087	0.5	40	90,576	0.5	42	19,968	0.0	0
90 - 95	307.7	0.0	0	2,564,036	0.0	0	95,608	0.5	42	21,077	0.2	21
95 - 100	323.9	0.0	0	2,698,985	0.0	0	100,640	0.0	0	22,187	2.6	229
> 0		28.6	2,509		27.5	2,411		28.9	2,530		27.5	2,411

## Alt 2: Package RTU

Percent Design Load	Clg Coil Capacity (tons)	Hours (%)	Hours	Htg Coil Capacity (Btuh)	Hours (%)	Hours	Clg Airflow Capacity (cfm)	Hours (%)	Hours	Htg Airflow Capacity (cfm)	Hours (%)	Hours
0	0.0	71.4	6,251	0	72.5	6,349	0	71.1	6,230	0	72.5	6,349
>0 - 5	16.2	9.7	850	134,949	1.8	160	5,032	0.0	0	1,109	0.9	82
5 - 10	32.4	4.1	355	269,899	4.8	418	10,064	0.0	0	2,219	1.0	87
10 - 15	48.6	2.0	172	404,848	1.0	91	15,096	0.0	0	3,328	1.4	122
15 - 20	64.8	1.7	149	539,797	1.0	87	20,128	0.0	0	4,437	3.3	287
20 - 25	81.0	3.5	304	674,746	10.4	915	25,160	0.0	0	5,547	0.3	23
25 - 30	97.2	3.4	297	809,696	3.3	288	30,192	21.4	1,872	6,656	0.8	68
30 - 35	113.4	0.5	42	944,645	0.7	58	35,224	1.4	127	7,765	0.5	44
35 - 40	129.6	1.2	107	1,079,594	1.2	104	40,256	1.5	129	8,875	0.5	43
40 - 45	145.8	1.7	149	1,214,543	0.2	19	45,288	0.3	23	9,984	2.2	192
45 - 50	162.0	0.0	0	1,349,493	0.2	21	50,320	1.2	107	11,093	11.5	1,009
50 - 55	178.2	0.0	0	1,484,442	0.2	21	55,352	0.2	20	12,203	0.5	41
55 - 60	194.3	0.0	0	1,619,391	0.5	43	60,384	0.2	20	13,312	0.7	59
60 - 65	210.5	0.3	22	1,754,340	0.5	42	65,416	0.7	64	14,421	0.7	61
65 - 70	226.7	0.5	42	1,889,290	0.7	61	70,448	0.7	62	15,531	0.2	21
70 - 75	242.9	0.2	20	2,024,239	0.0	0	75,480	0.3	22	16,640	0.0	0
75 - 80	259.1	0.0	0	2,159,188	0.3	23	80,512	0.0	0	17,749	0.3	22
80 - 85	275.3	0.0	0	2,294,137	0.2	20	85,544	0.0	0	18,859	0.0	0
85 - 90	291.5	0.0	0	2,429,087	0.5	40	90,576	0.5	42	19,968	0.0	0
90 - 95	307.7	0.0	0	2,564,036	0.0	0	95,608	0.5	42	21,077	0.2	21
95 - 100	323.9	0.0	0	2,698,985	0.0	0	100,640	0.0	0	22,187	2.6	229
> 0		28.6	2,509		27.5	2,411		28.9	2,530		27.5	2,411

## Alt 3: 4 pipe AHU, t

Percent Design Load	Clg Coil Capacity (tons)	Hours (%)	Hours	Htg Coil Capacity (Btuh)	Hours (%)	Hours	Clg Airflow Capacity (cfm)	Hours (%)	Hours	Htg Airflow Capacity (cfm)	Hours (%)	Hours
0	0.0	71.4	6,251	0	72.5	6,349	0	71.1	6,230	0	72.5	6,349
>0 - 5	16.2	9.7	850	134,949	1.8	160	5,032	0.0	0	1,109	0.9	82

5 - 10	32.4	4.1	355	269,899	4.8	418	10,064	0.0	0	2,219	1.0	87
10 - 15	48.6	2.0	172	404,848	1.0	91	15,096	0.0	0	3,328	1.4	122
15 - 20	64.8	1.7	149	539,797	1.0	87	20,128	0.0	0	4,437	3.3	287
20 - 25	81.0	3.5	304	674,746	10.4	915	25,160	0.0	0	5,547	0.3	23
25 - 30	97.2	3.4	297	809,696	3.3	288	30,192	21.4	1,872	6,656	0.8	68
30 - 35	113.4	0.5	42	944,645	0.7	58	35,224	1.4	127	7,765	0.5	44
35 - 40	129.6	1.2	107	1,079,594	1.2	104	40,256	1.5	129	8,875	0.5	43
40 - 45	145.8	1.7	149	1,214,543	0.2	19	45,288	0.3	23	9,984	2.2	192
45 - 50	162.0	0.0	0	1,349,493	0.2	21	50,320	1.2	107	11,093	11.5	1,009
50 - 55	178.2	0.0	0	1,484,442	0.2	21	55,352	0.2	20	12,203	0.5	41
55 - 60	194.3	0.0	0	1,619,391	0.5	43	60,384	0.2	20	13,312	0.7	59
60 - 65	210.5	0.3	22	1,754,340	0.5	42	65,416	0.7	64	14,421	0.7	61
65 - 70	226.7	0.5	42	1,889,290	0.7	61	70,448	0.7	62	15,531	0.2	21
70 - 75	242.9	0.2	20	2,024,239	0.0	0	75,480	0.3	22	16,640	0.0	0
75 - 80	259.1	0.0	0	2,159,188	0.3	23	80,512	0.0	0	17,749	0.3	22
80 - 85	275.3	0.0	0	2,294,137	0.2	20	85,544	0.0	0	18,859	0.0	0
85 - 90	291.5	0.0	0	2,429,087	0.5	40	90,576	0.5	42	19,968	0.0	0
90 - 95	307.7	0.0	0	2,564,036	0.0	0	95,608	0.5	42	21,077	0.2	21
95 - 100	323.9	0.0	0	2,698,985	0.0	0	100,640	0.0	0	22,187	2.6	229
> 0		28.6	2,509		27.5	2,411		28.9	2,530		27.5	2,411

## EQUIPMENT ENERGY CONSUMPTION

## Alt 1: 4 pipe At

	Main Clg	Clg Aux	Clg Twr	Main Htg	Htg Aux	Fan Equip	Lights	Misc Equip	BaseUtil & Dhwh	Bldg Total
Month	(kBtu)	(kBtu)	(kBtu)	(kBtu)	(kBtu)	(kBtu)	(kBtu)	(kBtu)	(kBtu)	(kBtu)
Jan	5,261	11,575	342	250,025	1,120	16,121	181,032	30,813	12,519	508,807
Feb	4,715	13,465	262	216,100	977	14,463	163,672	27,878	11,327	452,858
Mar	10,516	18,110	413	187,589	888	16,745	190,951	33,747	13,711	472,671
Apr	15,608	15,748	641	104,985	618	14,471	173,592	29,345	11,923	366,931
May	45,673	20,787	3,752	31,565	510	31,638	185,991	32,280	13,115	365,310
Jun	35,430	17,323	2,726	85,177	680	7,765	74,397	10,911	4,433	238,842
Jul	33,412	15,748	2,478	79,393	618	7,071	76,876	9,920	4,030	229,546
Aug	36,606	18,110	2,850	101,582	799	8,254	76,876	11,407	4,635	261,120
Sep	41,873	18,898	4,172	31,924	541	27,464	173,592	29,345	11,923	339,730
Oct	15,305	17,323	622	148,272	849	15,803	185,991	32,280	13,115	429,561
Nov	12,195	16,535	477	171,470	811	15,552	178,552	30,813	12,519	438,924
Dec	7,178	15,748	301	198,357	900	15,057	176,072	29,345	11,923	454,881
Total	263,771	199,370	19,035	1,606,441	9,309	190,404	1,837,595	308,084	125,172	4,559,181

## Alt 2: Package

	Main Clg	Clg Aux	Cond Fans	Main Htg	Htg Aux	Fan Equip	Lights	Misc Equip	BaseUtil & Dhwh	Bldg Total
Month	(kBtu)	(kBtu)	(kBtu)	(kBtu)	(kBtu)	(kBtu)	(kBtu)	(kBtu)	(kBtu)	(kBtu)
Jan	7,576	0	243	250,025	0	16,121	181,032	30,813	12,519	498,329
Feb	6,764	0	227	216,100	0	14,463	163,672	27,878	11,327	440,431
Mar	16,390	0	566	187,589	0	16,745	190,951	33,747	13,711	459,699
Apr	29,245	0	1,172	104,985	0	14,471	173,592	29,345	11,923	364,733
May	94,946	0	5,486	31,565	0	31,638	185,991	32,280	13,115	395,021
Jun	87,424	0	5,084	85,177	0	7,765	74,397	10,911	4,433	275,193
Jul	80,209	0	4,987	79,393	0	7,071	76,876	9,920	4,030	262,486
Aug	88,812	0	5,287	101,582	0	8,254	76,876	11,407	4,635	296,854
Sep	87,018	0	5,355	31,924	0	27,464	173,592	29,345	11,923	366,620
Oct	25,982	0	974	148,272	0	15,803	185,991	32,280	13,115	422,417
Nov	19,597	0	703	171,470	0	15,552	178,552	30,813	12,519	429,205
Dec	10,342	0	352	198,357	0	15,057	176,072	29,345	11,923	441,448
Total	554,303	0	30,435	1,606,441	0	190,404	1,837,595	308,084	125,172	4,652,435

## Alt 3: 4 pipe At

	Main Clg	Clg Aux	Clg Twr	Main Htg	Htg Aux	Fan Equip	Lights	Misc Equip	BaseUtil & Dhwh	Bldg Total
Month	(kBtu)	(kBtu)	(kBtu)	(kBtu)	(kBtu)	(kBtu)	(kBtu)	(kBtu)	(kBtu)	(kBtu)
Jan	5,261	11,575	342	362,276	6,462	16,121	181,032	30,813	12,519	626,400
Feb	4,715	13,465	262	316,652	5,638	14,463	163,672	27,878	11,327	558,071
Mar	10,516	18,110	413	283,752	5,125	16,745	190,951	33,747	13,711	573,071
Apr	15,608	15,748	641	167,570	3,565	14,471	173,592	29,345	11,923	432,463
May	45,673	20,787	3,752	54,362	2,942	31,638	185,991	32,280	13,115	390,539
Jun	35,430	17,323	2,726	144,093	3,922	7,765	74,397	10,911	4,433	301,000
Jul	33,412	15,748	2,478	134,273	3,565	7,071	76,876	9,920	4,030	287,373
Aug	36,606	18,110	2,850	171,775	4,613	8,254	76,876	11,407	4,635	335,126
Sep	41,873	18,898	4,172	54,253	3,120	27,464	173,592	29,345	11,923	364,639
Oct	15,305	17,323	622	233,825	4,903	15,803	185,991	32,280	13,115	519,167
Nov	12,195	16,535	477	265,620	4,680	15,552	178,552	30,813	12,519	536,942
Dec	7,178	15,748	301	297,004	5,192	15,057	176,072	29,345	11,923	557,820
Total	263,771	199,370	19,035	2,485,454	53,727	190,404	1,837,595	308,084	125,172	5,482,612



## MONTHLY ENERGY CONSUMPTION BY UTILITY

## Alt 1: 4 pipe At

	On Peak Elec Demand	Off Peak Elec Demand	On Peak Elec Consumption	Off Peak Elec Consumption	Total Elec Consumption	Gas Consumption
Month	(kW)	(kW)	(kWh)	(kWh)	(kWh)	(therms)
Jan	935	92	134,638	10,773	145,411	125
Feb	931	103	119,336	10,032	129,368	113
Mar	893	30	127,965	6,509	134,474	137
Apr	690	30	96,145	7,872	104,017	119
May	632	30	95,987	7,205	103,192	131
Jun	375	30	62,868	5,813	68,681	44
Jul	375	30	58,083	7,993	66,075	40
Aug	377	30	69,337	5,813	75,149	46
Sep	640	30	88,175	7,872	96,047	119
Oct	749	30	114,812	7,205	122,018	131
Nov	825	30	117,760	7,175	124,935	125
Dec	908	100	119,465	10,321	129,786	119
Total	935	103	1,204,571	94,582	1,299,153	1,252

## Alt 2: Package

	On Peak Elec Demand	Off Peak Elec Demand	On Peak Elec Consumption	Off Peak Elec Consumption	Total Elec Consumption	Gas Consumption
Month	(kW)	(kW)	(kWh)	(kWh)	(kWh)	(therms)
Jan	934	90	131,658	10,683	142,341	125
Feb	916	102	115,766	9,961	125,726	113
Mar	878	30	124,164	6,509	130,673	137
Apr	670	30	95,501	7,872	103,372	119
May	675	30	104,692	7,205	111,897	131
Jun	425	30	73,519	5,813	79,332	44
Jul	421	30	67,734	7,993	75,727	40
Aug	429	30	79,807	5,813	85,619	46
Sep	674	30	96,054	7,872	103,925	119
Oct	728	30	112,719	7,205	119,924	131
Nov	796	30	114,913	7,175	122,088	125
Dec	893	99	115,566	10,284	125,850	119
Total	934	102	1,232,093	94,383	1,326,476	1,252

## Alt 3: 4 pipe At

	On Peak Elec Demand	Off Peak Elec Demand	On Peak Elec Consumption	Off Peak Elec Consumption	Total Elec Consumption	Gas Consumption
Month	(kW)	(kW)	(kWh)	(kWh)	(kWh)	(therms)
Jan	425	38	65,246	8,474	73,720	3,748
Feb	425	38	59,840	7,576	67,416	3,280
Mar	436	30	74,243	6,509	80,752	2,975
Apr	461	30	66,248	7,872	74,120	1,795
May	632	30	87,451	7,205	94,656	675
Jun	218	30	38,862	5,813	44,674	1,485
Jul	218	30	35,685	7,993	43,677	1,383
Aug	221	30	40,691	5,813	46,503	1,764
Sep	640	30	79,577	7,872	87,449	662
Oct	447	30	72,556	7,205	79,762	2,469
Nov	446	30	68,654	7,175	75,829	2,781
Dec	427	38	64,082	8,844	72,925	3,089
Total	640	38	753,135	88,350	841,484	26,106

## ECONOMIC PARAMETERS

Study Life	Deprec. Life	Finance Term	Cost of Capital	Interest Rate	Percent Financed	Deprec. Tax Method	Deprec. Book Method	Income Tax Rate	Inflation Maint, Elec, Gas
20 yrs	10 yrs	10 yrs	10 %	9 %	0 %	SL	SL	0 %	5 / 5 / 5 / 5 %

## INSTALLED COST

Alternative	Initial First Cost (\$/ft2)	Other First Cost (\$/ton)	Total Installed Cost (U.S. \$)	Maint. Cost (\$/ton)	Revenue Penalty (U.S. \$)	Total Annual Cost (U.S. \$)	TOTAL COST (U.S. \$)
1	21.00	0.00	2,543,100	43.43	0.00	14,068	2,557,168
2	15.56	0.00	1,884,316	45.58	0.00	14,764	1,899,080
3	21.50	0.00	2,603,650	43.43	0.00	14,068	2,617,718

## YEARLY CASH FLOW

Alt 1: 4 pipe At

year	Utility Cost (U.S. \$)	Maint. Cost (U.S. \$)	Interest Cost (U.S. \$)	Principal Cost (U.S. \$)	Replace. Expenses (U.S. \$)	Deprec. Tax (U.S. \$)	Deprec. Book (U.S. \$)	Cash Flow (U.S. \$)	Present Value (U.S. \$)
1	142,624	14,068	0	0	0	254,310	254,310	156,692	142,447
2	149,755	14,771	0	0	0	254,310	254,310	164,526	135,972
3	157,243	15,510	0	0	0	254,310	254,310	172,753	129,792
4	165,105	16,285	0	0	0	254,310	254,310	181,390	123,892
5	173,360	17,099	0	0	0	254,310	254,310	190,460	118,260
6	182,028	17,954	0	0	0	254,310	254,310	199,983	112,885
7	191,130	18,852	0	0	0	254,310	254,310	209,982	107,754
8	200,686	19,795	0	0	0	254,310	254,310	220,481	102,856
9	210,721	20,784	0	0	0	254,310	254,310	231,505	98,181
10	221,257	21,824	0	0	0	254,310	254,310	243,080	93,718
11	232,319	22,915	0	0	0	0	0	255,234	89,458
12	243,935	24,061	0	0	0	0	0	267,996	85,392
13	256,132	25,264	0	0	0	0	0	281,396	81,510
14	268,939	26,527	0	0	0	0	0	295,465	77,805
15	282,386	27,853	0	0	0	0	0	310,239	74,269
16	296,505	29,246	0	0	0	0	0	325,751	70,893
17	311,330	30,708	0	0	0	0	0	342,038	67,670
18	326,897	32,243	0	0	0	0	0	359,140	64,595
19	343,242	33,856	0	0	0	0	0	377,097	61,658
20	360,404	35,548	0	0	0	0	0	395,952	58,856

Alt 2: Package

year	Utility Cost (U.S. \$)	Maint. Cost (U.S. \$)	Interest Cost (U.S. \$)	Principal Cost (U.S. \$)	Replace. Expenses (U.S. \$)	Deprec. Tax (U.S. \$)	Deprec. Book (U.S. \$)	Cash Flow (U.S. \$)	Present Value (U.S. \$)
1	145,806	14,764	0	0	0	188,432	188,432	160,571	145,973
2	153,097	15,502	0	0	0	188,432	188,432	168,599	139,338
3	160,752	16,277	0	0	0	188,432	188,432	177,029	133,005
4	168,789	17,091	0	0	0	188,432	188,432	185,881	126,959
5	177,229	17,946	0	0	0	188,432	188,432	195,175	121,188
6	186,090	18,843	0	0	0	188,432	188,432	204,933	115,680
7	195,395	19,785	0	0	0	188,432	188,432	215,180	110,421
8	205,164	20,775	0	0	0	188,432	188,432	225,939	105,402
9	215,423	21,813	0	0	0	188,432	188,432	237,236	100,611
10	226,194	22,904	0	0	0	188,432	188,432	249,098	96,038
11	237,503	24,049	0	0	0	0	0	261,553	91,673
12	249,379	25,252	0	0	0	0	0	274,630	87,506
13	261,848	26,514	0	0	0	0	0	288,362	83,528
14	274,940	27,840	0	0	0	0	0	302,780	79,731
15	288,687	29,232	0	0	0	0	0	317,919	76,107
16	303,121	30,694	0	0	0	0	0	333,815	72,648

17	318,277	32,228	0	0	0	0	0	350,505	69,346
18	334,191	33,840	0	0	0	0	0	368,031	66,194
19	350,901	35,532	0	0	0	0	0	386,432	63,185
20	368,446	37,308	0	0	0	0	0	405,754	60,313

## Alt 3: 4 pipe Alt

	Utility Cost	Maint. Cost	Interest Cost	Principal Cost	Replace. Expenses	Deprec. Tax	Deprec. Book	Cash Flow	Present Value
year	(U.S. \$)	(U.S. \$)	(U.S. \$)	(U.S. \$)	(U.S. \$)	(U.S. \$)	(U.S. \$)	(U.S. \$)	(U.S. \$)
1	105,000	14,068	0	0	0	260,365	260,365	119,068	108,244
2	110,250	14,771	0	0	0	260,365	260,365	125,021	103,324
3	115,763	15,510	0	0	0	260,365	260,365	131,273	98,627
4	121,551	16,285	0	0	0	260,365	260,365	137,836	94,144
5	127,629	17,099	0	0	0	260,365	260,365	144,728	89,865
6	134,010	17,954	0	0	0	260,365	260,365	151,964	85,780
7	140,711	18,852	0	0	0	260,365	260,365	159,563	81,881
8	147,746	19,795	0	0	0	260,365	260,365	167,541	78,159
9	155,133	20,784	0	0	0	260,365	260,365	175,918	74,606
10	162,890	21,824	0	0	0	260,365	260,365	184,714	71,215
11	171,035	22,915	0	0	0	0	0	193,949	67,978
12	179,586	24,061	0	0	0	0	0	203,647	64,888
13	188,566	25,264	0	0	0	0	0	213,829	61,939
14	197,994	26,527	0	0	0	0	0	224,521	59,123
15	207,894	27,853	0	0	0	0	0	235,747	56,436
16	218,288	29,246	0	0	0	0	0	247,534	53,871
17	229,203	30,708	0	0	0	0	0	259,911	51,422
18	240,663	32,243	0	0	0	0	0	272,906	49,085
19	252,696	33,856	0	0	0	0	0	286,551	46,853
20	265,331	35,548	0	0	0	0	0	300,879	44,724

## ALTERNATIVE COMPARISON

Alternative Comparison	First Cost	Net Present Value of Cash Flows	Life Cycle Cost Difference	Simple Payback on Investment	Life Cycle Payback on Investment	Internal Rate of Return
Alt x - Alt Base	Difference					
Alt 1 - Alt 2	\$658,784	\$-611,802	\$-611,802	169.8 yrs	> 20.0 yrs	<= 0
Alt 3 - Alt 2	\$719,334	\$-216,652	\$-216,652	17.3 yrs	> 20.0 yrs	6.0%

	Cash Flow	Cumulative Cash Flow	Present Value Cumulative Cash Flow
Alt 1 - Alt 2 year	(U.S. \$)	(U.S. \$)	(U.S. \$)
0	-658,784	-658,784	-658,784
1	3,879	-654,905	-655,258
2	4,073	-650,832	-651,892
3	4,277	-646,556	-648,679
4	4,490	-642,065	-645,612
5	4,715	-637,350	-642,684
6	4,951	-632,400	-639,890
7	5,198	-627,202	-637,222
8	5,458	-621,744	-634,676
9	5,731	-616,013	-632,245
10	6,018	-609,995	-629,925
11	6,318	-603,677	-627,711
12	6,634	-597,042	-625,597
13	6,966	-590,076	-623,579
14	7,314	-582,762	-621,653
15	7,680	-575,082	-619,815
16	8,064	-567,018	-618,060
17	8,467	-558,551	-616,384
18	8,891	-549,660	-614,785
19	9,335	-540,325	-613,259
20	9,802	-530,523	-611,802



	Cash	Cumulative	Present Value
	Flow	Cash	Cumulative
Alt 3 - Alt 2	Difference	Flow	Cash Flow
year	(U.S. \$)	(U.S. \$)	(U.S. \$)
0	-719,334	-719,334	-719,334
1	41,503	-677,831	-681,604
2	43,578	-634,254	-645,590
3	45,757	-588,497	-611,212
4	48,044	-540,453	-578,397
5	50,447	-490,006	-547,074
6	52,969	-437,037	-517,174
7	55,617	-381,420	-488,634
8	58,398	-323,022	-461,391
9	61,318	-261,704	-435,386
10	64,384	-197,319	-410,563
11	67,603	-129,716	-386,868
12	70,983	-58,733	-364,251
13	74,533	15,800	-342,661
14	78,259	94,059	-322,053
15	82,172	176,231	-302,382
16	86,281	262,512	-283,605
17	90,595	353,107	-265,681
18	95,125	448,232	-248,572
19	99,881	548,112	-232,241
20	104,875	652,987	-216,652

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 ECONOMIC SUMMARY
 

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	Installed	First Year	Final Year	First Year	Final Year	Life Cycle
	Cost	Util. Cost	Util. Cost	Annual Cost	Annual Cost	Cost
Alternative	(U.S. \$)	(U.S. \$)	(U.S. \$)	(U.S. \$)	(U.S. \$)	(U.S. \$)
1	2,543,100	142,624	360,404	14,068	35,548	4,440,962
2	1,884,316	145,806	368,446	14,764	37,308	3,829,161
3	2,603,650	105,000	265,331	14,068	35,548	4,045,812

**7. A detailed discussion of assumptions about user fees or rates, lease payments and other service payments, and the methodology and circumstances for changes, and usage of the projects over the useful life of the projects.**

No response required per MB Kahn notification dated 9.12.11.

**8. Identification of any known government support or opposition, or general public support or opposition for the project. Government or public support should be demonstrated through resolution of official bodies, minutes of meetings, letters, or other official communications.**

No response required per MB Kahn notification dated 9.12.11.



**9. Demonstration of consistency with appropriate Board and/or affected jurisdiction comprehensive plans (including relevant environmental, land use and facility standards ordinances, where applicable) infrastructure development plans, transportation plans, the capital improvement plan and capital budget, or indication of the steps required for acceptance into such plans.**

No response required per MB Kahn notification dated 9.12.11.

**10. Explanation of how the proposed project would impact the Board’s or affected jurisdiction’s development plans.**

No response required per MB Kahn notification dated 9.12.11.

**11. Identification of any known conflicts of interest or other factors that may impact the Board's consideration of the proposal, including the identification of any persons known to the proposer who would be obligated to disqualify themselves from participation in any transaction arising from or in connection to the project pursuant to The Virginia State and Local Government Conflict of Interest Act, Chapter 31 (Va. Code 2.2-3100 et seq).**

Disclosure is hereby made that Terrence R. Collier, owner of Maxim Engineering, Inc., is the nephew of Frederick M. Collier, a property owner on the proposed Central Office Site # 2. This property, if this site is selected, will need to be purchased by the Wise County School Board. Preliminary analysis shows this not to be a conflict of interest as defined by the referenced statute. Neither Terrence R. Collier nor Maxim Engineering, Inc. will realize any additional benefit if this site is selected for the location of the new Central High School.

Other than this item, there are no persons known to S.B. Ballard Construction Company or any associate firms that would be obligated to disqualify themselves from participation in any transaction arising from or in connection to this project as per the cited statute or for any other reason.

**12. Description of an ongoing performance evaluation system or database to track key performance criteria, including but not limited to, schedule, cash management, quality, worker safety, change orders and legal compliance.**

Utilizing our extensive experience gained through the completion of numerous complex educational facilities, S.B. Ballard will implement a series of control measures to assure Wise County Public Schools that the entire project sequence will be completed in accordance with the highest achievable performance evaluation and control standards, including:

Schedule

As described in Section 2.f of our Conceptual Proposal, working in conjunction with WCPS and all applicable jurisdictions, S.B. Ballard will develop and maintain an extremely detailed CPM schedule for the project that includes every key element in the process from pre-design through turn-over of the facility to the school district. The schedule will be reviewed and maintained on a daily basis by the S.B. Ballard project manager and superintendents, updated with all pertinent data immediately on determination of changes to any critical timelines, and reviewed at each project progress meeting with the owner and their designated representatives. S.B. Ballard takes an extremely proactive approach in creating and maintaining the project schedule, with the result being that we have never missed an established date of beneficial occupancy for any client who has entrusted us with constructing their facility. Please see Section 2.j of our Conceptual proposal for further information regarding our approach to maintaining the integrity of the schedule.

Cash Management & Changes to the Work

Immediately upon the award of the project, S.B. Ballard will generate an estimated Progressive Payment Report for the use of Wise County Public Schools. Establishing our baseline schedule of values following consultation with WCPS and their agents, the progress payment report is linked to the CPM schedule which allows us to provide the client with a very accurate projection of each month's gross and net payment requirements for the entire course of the job, allowing them to plan well in advance of actually receiving a periodic billing.

Our success in maintaining accurate records of additional work ordered by the Owner is exceptional. As this project is a GMP Design/Build, changes to the scope of work that impact the price will be minimized, most likely only occurring through an addition to the original contract scope that comes at the request of WCPS. By working closely with the school district throughout the final stages of the design process we would strive to resolve as many potential changes as possible long before the project breaks ground.

Quality Control

S.B. Ballard continuously works toward maintaining the highest standards of quality on every job we do. Our exceptional success in meeting the needs and exceeding the expectations of our customer is best evidenced through the simple factual statement that over 85% of our annual volume is for repeat clients, many of which have selected S.B. Ballard for three or more projects. In the extremely tough economic climate of the past three years, when a client could have their pick of any contractor, our previous educational clientele have honored us as their selection.



Worker Safety

S.B. Ballard's exceptional worker safety record can be simply described by the fact that our Experience Modification Rate (EMR) is 0.78, and that currently we have worked in excess of 1,500,000 consecutive hours with 0 accident reports.

Equally important is our planned approach to the safety and well-being of the general public and neighbors of the proposed school. S.B. Ballard is very proud of our record in being "Community-Considerate," and we have outlined numerous details of just exactly how we plan to pursue this effort on the new high school project for Wise County. Please reference Section 4.b of our Conceptual Proposal for additional information on this topic.

Please see the enclosed envelope titled **Proprietary Information** for this section.

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Please see the enclosed envelope titled **Proprietary Information** for this section.

The prototype 750 student high school facility design proposed by the Design/Build team of S.B. Ballard/RRMM/Maxim for Wise County Public Schools incorporates the perfect combination of materials and applications to create a campus which we feel meets the requirements and exceeds the expectations of you, our client. It is important at the onset of these comments to state that this description is to be considered preliminary in content and nature and, as such, is anticipated to change significantly until the final designs have been determined. We expect and very much desire that Wise County Public Schools will be an active and interested participant in both the Programming Charrettes, as well as all subsequent design development discussions that are scheduled to resolve all design issues for both new schools; a process that will truly allow the entire team to arrive at an end-result of which we all can be very proud of for a great many years.

While this description is indeed preliminary and conceptual in content, it also accurately provides a series of baseline applications that will not be diminished in any way unless it is at the express request of the Owner. Our intent is not to mandate a specific application or to limit the input and creativity of the residents of Wise County, but we believe it is in everyone's best interest to establish these guidelines.

#### **Description of Building Applications:**

We have utilized the "Education Program Space Summary" for a prototypical 750 student school, a document provided by the Owner in the RFP dated June 28, 2011. It is important to note that we have made the following assumptions regarding the dedicated space allocations and the overall building net SF area:

- Our proposed plan is based on the construction of two prototype schools, each with a total net square footage area of 121,070 SF, including the auditorium. We believe it is perfectly matched to provide all of the area allocations stated in the Space Summary, and is in fact, still considerably larger than what is required to meet your stated needs. At 121,070 SF it significantly exceeds the average SF/Student ratio of 152 SF reported by the Virginia Department of Support Services for every high school constructed in the State over the past six years.
- For this detailed submission we have provided a full compliment of all listed designated spaces and amenities for each school, including the Auditorium.

Throughout this conceptual process, we have assumed and made significant provisions for the new schools to be constructed to the highest energy-efficiency standards consistent with the Owner's budget. Each school building itself has been designed to minimize energy costs and to assure that the end products meet the highest standards of quality, while being capable of exceptional longevity.

We have designed primary entrances that open to a central 'Main Street' corridor that connects as well as separates common use areas from the basic Learning Center areas. This allows the classroom area in each school to be easily secured from public use spaces (Dining Area, Gymnasium, Auditorium, Administrative Suite) during non-school hours to facilitate the use of the

new schools by the residents of Wise County for various social groups, civic clubs, etc. so that the entire county realizes direct benefits from this new investment on their part.

The classroom wings are proposed as partial two-story structures in order to conserve limited land area and provide the most cost-effective solution. They are composed along a double-loaded corridor to promote an efficient building design. The media center, teacher planning spaces, student locker pods, storage rooms, resource rooms, computer labs and toilets are strategically located for convenient access. The classroom wings will be oriented to the sun to the greatest extent possible, in a way to maximize the opportunities for effective natural lighting strategies and to provide access to an outdoor space for select classes and dining opportunities.

We believe that the natural lighting strategies that have been developed by the S.B. Ballard/RRMM/Maxim team represent some of the most truly cost-effective and energy saving techniques employed in modern schools and are integral to creating a welcoming and open indoor environment. The major elements of the new school will be oriented on the site to take advantage of the east-to-west path of the sun. Clerestory windows, directional light accessories, white primary roofs, top lighting applications and interior window applications will work in concert to provide natural sunlight to the classrooms, art center, gymnasium, dining area and media center as well as other high-use spaces. Additional sustainable design features and applications we propose to maximize the energy efficiency of the building include:

- Exterior vision windows will be glazed with double-insulating Low-E glass.
- An energy-efficient building shell with thermal barriers will be used throughout.
- Quantity of indoor contaminants will be minimized by the use of low VOC products.
- Maximize the use of regional and recycled materials throughout the project.
- Minimize the volume of landfill debris through a carefully structured and strictly managed program of separation and recycling.
- Light colored roofing materials will be used to reduce heat gain and reflect sunlight into roof monitors and windows for daylighting.
- Occupancy sensors will be provided in all rooms so that lighting in vacant rooms will automatically switch off.
- Indirect fluorescent lighting will be installed throughout the school. The lighting will be dimmable and controlled by photo-cell sensors to work in conjunction with the natural daylight to minimize artificial light usage.
- Ganged fluorescent lighting will be used in the gymnasiums in lieu of more costly to operate halide fixtures.
- The HVAC equipment for each separate school will be sized for seasonal and hourly loads, rather than peak/maximum loading to avoid oversizing of equipment.
- Exterior lighting for building security, sports field alternates if selected and parking lot illumination will be designed to limit light trespass from the complex and improve nighttime visibility through glare reduction.

The primary buildings themselves as currently envisioned by the S.B. Ballard/RRMM/Maxim team and as represented in our proposed pricing include the following applications and features:

- Concrete spread footings and support pier foundation system.
- Structural steel support framing and metal floor and roof decking.
- Reinforced concrete masonry unit (CMU) perimeter walls with brick veneer and architectural pre-cast accent trim to all exterior surfaces not indicated to be glass or composite metal panels.
- Reinforced CMU corridor and primary demising partitions.
- Metal-pan stair systems & miscellaneous metals as required.
- Cast-in-Place concrete floors.
- Thermal and acoustic insulation to maximize energy efficiency and STC ratings.
- Dampproofing air barrier at all exterior masonry walls.
- Composite metal panels to selected exterior surfaces not to exceed 10% of skin.
- A white-colored, insulated thermoplastic polyolefin (TPO) w/ fleece backing roof membrane system.
- All required waterproofing, fireproofing, firestopping, fire-resistive joint systems, expansion joint and sealant/caulking applications as required.
- Hollow metal door and interior borrowed lite frames as scheduled with a combination of hollow metal and solid core wood doors rated as required.
- Heavy-duty door hardware appropriately scheduled for required usage.
- Overhead coiling doors and grilles at select areas.
- Fenestration system including aluminum-framed windows, curtainwall and entrances.
- Metal wall and ceiling framing and gypsum wall board applications as required.
- Porcelain tile floors at entrance lobbies, 1<sup>st</sup> floor Main Street and Dining Area.
- Ceramic/Quarry tile floors at food preparation areas and restrooms. Restrooms will receive ceramic tile on wet walls to a height of 60", while showers will receive full-height wall tile.
- Acoustical wall panels as required for enhanced sound transmission class ratings at the Music Centers and Auditoriums.
- Acoustical ceiling tile systems at all designated areas.
- A combination of vinyl composition tile, vice cove base and carpet tile at select areas.
- Specialized chemical-resistant floor surfaces will be provided at the Science labs.
- Wood flooring at the Gymnasium and Stage areas.
- Resilient athletic flooring at the Wrestling and Athletic Training rooms.
- Epoxy-coated floors at locker rooms, showers, toilets and offices in the Physical Education area.
- Paint or stain applications at all exposed finish surfaces not purchased pre-finished.
- All non-electronic visual display surfaces including tackboards, whiteboards and projection screens.
- Display cases at entrance lobbies.
- All code required interior and exterior signage. Specialized interior or exterior Owner signage is not included.
- Stainless Steel shower doors.



- Solid-Composite toilet partitions and screens.
- Toilet accessories as required.
- Student lockers, athletic lockers and locker room benches.
- Fire extinguishers and cabinets per code.
- Foodservice equipment designed to provide full kitchen facilities at each school.
- Gymnasium equipment and padding.
- Laminate-clad or wood casework with solid-composite tops as indicated.
- Recessed metal framed floor mats at main exterior entrances.
- Telescoping seating at the Gymnasiums for 1,000 person capacity events
- Fixed audience seating at the Auditoriums for 700+ person capacity events.
- A 3,500-pound capacity hydraulic elevator sized for freight and emergency equipment.
- Fire protection system per code.
- Complete plumbing system applications with low-flow fixtures.
- Complete HVAC system applications incorporating a 4-pipe boiler/chiller hydroponic system as the base bid. We have provided an alternate credit to substitute high-efficiency roof-top units in lieu of the 4-pipe system.
- Complete electrical system applications per code.
- Rough-in conduits for a complete information technology system, including voice/data system, speaker/paging system, closed-circuit television, and integrated security system applications including entrance coding and camera surveillance. Power wiring, all equipment and all installations for these items are to be within the contract for Technology Equipment provided by the Owner under a separate agreement.
- Exterior building, parking area and drive lane lighting is included in our proposed base price; any lighting for exterior sports facilities are referenced in the requested alternate prices for these various applications.

**Description of Site Applications:**

- All erosion control measures, clearing & grubbing, construction entrances, tire wash stations, traffic barricades, safety signage and any required traffic control measures at public streets is included.
- Our proposed pricing includes the standard demolition and disposal of the existing structures and site improvements from each particular site under consideration. No hazardous material investigation, reports or abatement is included in our pricing.
- All common excavation, cut, grading, rock removal, backfill and compaction requirements for each site are included.
- We have anticipated and calculated that all proposed sites will balance on-site.
- Our pricing assumes that all required select backfill, clay sub-base and topsoil to complete our planned final grade elevations is available within each prospective site.
- Complete stormwater management system applications are included in our proposal for each proposed site, including detention basins, swales, end structures, drop inlets, catch basins, manhole structures, piping and fittings.

- All sanitary sewer, and water system components required for complete implementation of these services including tap connections, meter vaults, piping and fittings, manhole structures, backflow preventers, check valves, pressure regulators, hydrants, fire department connections, and equipment pads are included in our pricing for each location.
- We include the vehicular asphalt, concrete entrance aprons and concrete paving in the quantities and at the locations indicated on our preliminary plans for each site. Heavy-duty service lanes are included as 8/3/1.5 applications, while standard-duty parking areas are included as 6/2/1.5 applications. Concrete paving at loading and service areas is included as 8/6 applications with steel reinforcing.
- All parking spaces have been priced with painted line stripping, and as required, restrictive signage. We include all code-required Americans with Disabilities Act parking area signage and pavement striping.
- All concrete curb/gutter is priced as 18". Islands indicated on our preliminary site plans are priced as concrete curbs; these may be substantially reduced at the Owner's request should this be beneficial in your snow removal activities.
- Concrete pedestrian sidewalks, ramps, stairs and plaza areas indicated on our site plans will be 4' reinforced applications. Any concrete walkway or access areas that traverse significant grade changes will receive code-compliant steel railings.
- 72" chain-link fencing will be provided at the perimeter of any stormwater basins with a gradient that provides safe egress from the pond area.
- All open, unimproved exterior ground areas that have been disturbed by the construction process will receive fine grading, seeding, fertilizing, and straw mulching to establish lawn areas.
- We have included landscape applications including plantings and mulch beds to all traffic islands and in all non-paved areas around the school building perimeter to a width of 96" unless noted otherwise on the preliminary plans.
- We include gravity-flow irrigation to landscaping at the building perimeter only, utilizing a combination of collected rainwater and supplies from the building source.
- We have included an allowance of \$20,250 at each proposed location to provide exterior applications including benches, trash receptacles, and bike racks.

**Site Narrative – Existing Union High School Site:**

Following a thorough review, our team has determined that the best location on the existing site for placement of the new school building is the area currently used as a football practice field, located to the rear and directly east of the current Union High School.

To facilitate the new construction and in an effort to minimize disruption to on-going school activities, a temporary construction entrance with a cleaning station will be installed directly south of the existing southern entrance to the school property. To aid in expediting the overall construction process, this entrance will be continued around the perimeter of the planned new school building allowing contractor access throughout the construction period. Temporary fencing will be erected as required to minimize trespassing of construction traffic into paved areas required

by ongoing school operations. This fencing will also be instrumental in offering protection to the students and staff of the school during the construction period.

The new storm water management retention pond area is planned to be installed at a location northwest of the existing school and directly west of the current baseball field. Storm water drop inlets, catch basins, manholes and piping will be provided in a staggered cycle to minimize disruption to the existing traffic requirements of the school.

The new sanitary sewer lines required for the new school will be installed by accessing the existing sewer lines through the existing manhole located in the southeast portion of the existing rear parking lot. The new sanitary sewer lines and manholes as needed will be installed along a path leading toward the existing manhole located to the north of the baseball field and will connect to the existing 8" line that intersects the current service to the site. The existing sewer lines that run under the planned footprint for the new school will then be abandoned and removed.

Domestic water service for the new school will be accessed at the point within the baseball field where the service line makes a right turn south toward the existing school. As a part of the scope of running the new 8" water line to planned school, two (2) fire hydrants will be appropriately positioned to best serve the new facility.

Following the completion of the new school building, it will be necessary to coordinate the demolition of the existing school in such a way that sufficient existing parking can be maintained until the demolition of the existing structures is completed and the permanent vehicular parking and drive-lane applications can be completed. As indicated on our preliminary site plan for this location, the final planned new car parking area will be placed on to the footprint of the previous school and will be serviced by its own drive-lane placed to roughly match the existing northern-most entrance to the school grounds. When this new passenger car lot is completed, the previous areas of the existing parking lot that extend from the western edge of the new lot toward Powell Valley Road will be demolished, fine graded, and receive new grass seeding to establish a lawn buffer between the road the new parking area.

A field to be used for outdoor physical education activities and also as a football practice field will be installed on the area east of the existing baseball field for use during construction and after completion of the new school.

The new bus loop and parking area will be located parallel with the southern elevation of the new school and work in concert with the planned primary student entrance ways into the classroom area; the entrance for bus traffic is intended to be located in roughly the same location as the current southern-most entrance into the campus.

The rear service entrance and associated parking area is shown entering the school grounds off of Champions Avenue. Our proposal includes replacing the existing deteriorated paving along Champion Avenue from the entrance into the new service lot up to the intersection with 2<sup>nd</sup> Avenue. An area to the south and east of the proposed school will be reserved for a future road to access the middle and primary schools.

**Site Narrative – Office Site # 1 (Existing Education Center):**

Following a thorough review, our team has determined that the best location on the existing site for placement of the new school building is in the central portion of the property as shown on our preliminary plan. This specific placement has many advantages: it permits the maintenance of a 50' right-of-way reservation for possible future widening of Fairground Street, keeps all building areas well removed from the 100-year flood zone, allows for reasonably short access drive-lanes into the bus loop and parking, service plaza and parking, and passenger car parking areas, and still maintains a considerable integral area of the property for lawn areas and the installation of various outdoor sport facilities, and allows the Central Office and Education Center buildings to continue to be used during the initial stages of construction.

A primary benefit of this site is that following the demolition of the existing structures the entire site will be available for multiple building and site construction activities to take place simultaneously. This allows for a much smoother operating and more dependable construction schedule throughout the project duration. Due to the property being completely encircled by active commercial and residential neighborhoods, we propose that the entire site should be enclosed in temporary fencing to protect the public. For this site, further discussions will need to be held with the school administration and Town of Wise officials to determine the best location to establish the temporary construction entrance to minimize disruption to residents and existing traffic flows.

The new storm water management retention pond is planned to be installed at a location roughly adjacent to the intersection of Old Hurricane Road and Lake Street, allowing the natural grade and the proximity to the flood zone to work in harmony with the retention requirements.

The sanitary sewer requirements for the new school can be met by accessing the existing 8" line that currently transverses the site, though it will be necessary to relocate a portion of this line and install a new manhole to assure that the primary line does not run under the new school.

To assure an adequate supply of domestic water, it will be necessary to tap the existing primary line across Hurricane road and run a new 8" loop along Lake Street, continuing to a tie-in to the 6" line near the intersection of Lake Street and Virginia Avenue.

As currently envisioned, the entrance to the passenger car lot will be at the approximate middle of the property and lead in from Hurricane Road. Both the entrance to the service area and the bus loop will enter the site from Virginia Avenue, and the exit from the bus loop will leave the school via Fairground Street.

**Site Narrative – Office # 2 Site (Adjacent to Vocational Technical School):**

Following a thorough review, our team has determined that the best location on this existing site for placement of the new school building is on a plateau that will need to be created near the current location of the Frederick Collier home. This particular site will require a greater amount of rock excavation and compacted fill than any of the other sites under consideration by Wise County Public Schools, and it will also mandate that a portion of the school building itself be built on



carefully compacted and tested fill. This will not compromise the structural integrity of the building but does add to the overall site development cost for this location, an expense that is partially offset by the minimal degree of structure demolition involved for this potential location.

For this location we propose that the best location for the temporary construction entrance would be that shown on our plan as the permanent site for the entrance to the service area at the extreme northern section of the area to be excavated. This will minimize disruption to the ongoing traffic flow requirements of the Vocational Technical School which this site abuts. Temporary fencing will be provided to segregate the area of building construction from both the grounds of the adjacent school, as well as access by neighborhood residents.

The new storm water management retention pond is planned to be provided at a location on the extreme southern tip of the overall site, allowing the natural grade and proximity to the flood zone to work in harmony with these requirements.

The sanitary sewer requirements for the school can best be met by accessing the existing 8" line that traverses the Vocational Technical School site at a point just north of the apex junction of the drive-lanes entering and existing the site and shown on our proposed plan. From this point we would provide a series of manholes and new 8" sewer line to a point of service entry to the new Central High School building.

To assure an adequate supply of domestic water, we believe it will be necessary to tap the existing primary service line across Lake Street where it intersects with Virginia Avenue. The new 8" service line would then be run into the new school approximately adjacent to the entrance drive for the "front" passenger car parking lot.

As presently planned and shown, the entrance to the passenger car lot would be directly adjacent to the present intersection of Lake Street and Virginia Avenue and the new service entrance would commence approximately 300' north of the car entrance.

We believe that the best approach to manage the bus traffic flow into and out of the site would be to utilize the existing entrance to the Vocational Technical School, improving this existing roadway both from its starting point at Lake Street and up to the northern point of the proposed bus parking area, then again from the point that it exits the V-T S parking lot and continuing to loop around to the north, then directly south, running parallel with the placement of the new car parking area, and providing a separate bus parking area as indicated on our plan.

Though under this plan all three approaches enter and exit the site from Lake Street, the distances of 500'+ and 300'+ between the drive aprons should help to mitigate congestion during peak travel times.

**Site Narrative – Existing Central High School Site:**

Following a thorough review, our team has determined that the best location on the existing site for placement of the new school building is the area currently used as a track and football field located at the northern extreme of the existing school grounds property. Further, as shown on our proposed site plan, the areas presently utilized as a softball field and a sports practice field will need to become the new passenger car parking plaza, while the area west and south of the existing football field will need to be reconfigured into the bus loop and service area entrance to support the new school. The existing baseball field will be retained.

Additional challenges to developing this portion of the site is the need to cut/fill a substantial portion of the mountainside east and south of the existing sports fields referenced above to allow these new uses to take place, as well as the requirement to provide a series of bridges to span the creek that traverses the site in a north/south direction for both bus and service-related traffic, and to allow safe travel paths for students from the bus drop-off area to the new entrances.

To address the loss of the referenced sports fields, we understand that WCPS is considering a new sports complex at a future date. Alternate locations for football and softball fields must be determined until a permanent football stadium can be provided. During this interim period, we recommend that an agreement be reached between WCPS and the University of Virginia's College at Wise that will allow the use of the field at the college.

To facilitate the new construction and in an effort to minimize disruption to on-going school activities, we propose utilizing the location shown on our plan as the new entrance for the passenger car parking area as the site for a temporary construction entrance and cleaning station. Temporary fencing will be erected as required to minimize trespassing of construction traffic into any paved areas scheduled to remain in use during construction. This fencing will offer protection to the students, staff and general public.

The new storm water management retention pond is planned to be installed at a location directly south of the new school and north of the existing baseball field. The natural grade of the site and close proximity to the flood zone promotes this location.

The new sanitary sewer line for the school will be an 8" line that crosses the existing stream and connects to the existing 12" primary line that runs north/south at the rear of the current school.

To assure an adequate supply of domestic water at sufficient pressure levels, it will be necessary to run a substantial quantity of 12" line leading from the primary water storage tower located approximately 2,200' south of the proposed entry point into the new school. Our review of the existing water service indicates that insufficient pressure is available by tapping into the lines that are currently available on-site.

We believe that the best approaches to minimize both any disruption to on-going school activities during construction, as well as to lessen any negative impact to standard traffic flows following completion of the new school, are to utilize the location of the construction entrance for the new

entrance to the passenger car parking area, and to establish a combined bus loop/service entrance at a location approximately 130' north of the car entrance. This places both entrances directly on Lake Street and in fairly near proximity to each other, but at a general location that is substantially removed from the busier traffic found nearer the center of town. We feel this will offer the best solution for entering and exiting this potential location for the new school.

Following transfer of educational operations to the new school, the existing school will be demolished. Since there is still some discussion regarding keeping the existing building for county offices, our value for demolition may be deducted if requested.

The following sections contains the S.B. Ballard/RRMM/Maxim design team's preliminary floor plans, exterior perspective and site plans for all four (4) proposed locations that we have been informed are under consideration by Wise County Public Schools at this time.





## MAIN ENTRY PERSPECTIVE

Wise County Public Shools



S.B. BALLARD  
CONSTRUCTION  
COMPANY



MAXIM  
ENGINEERING, INC.

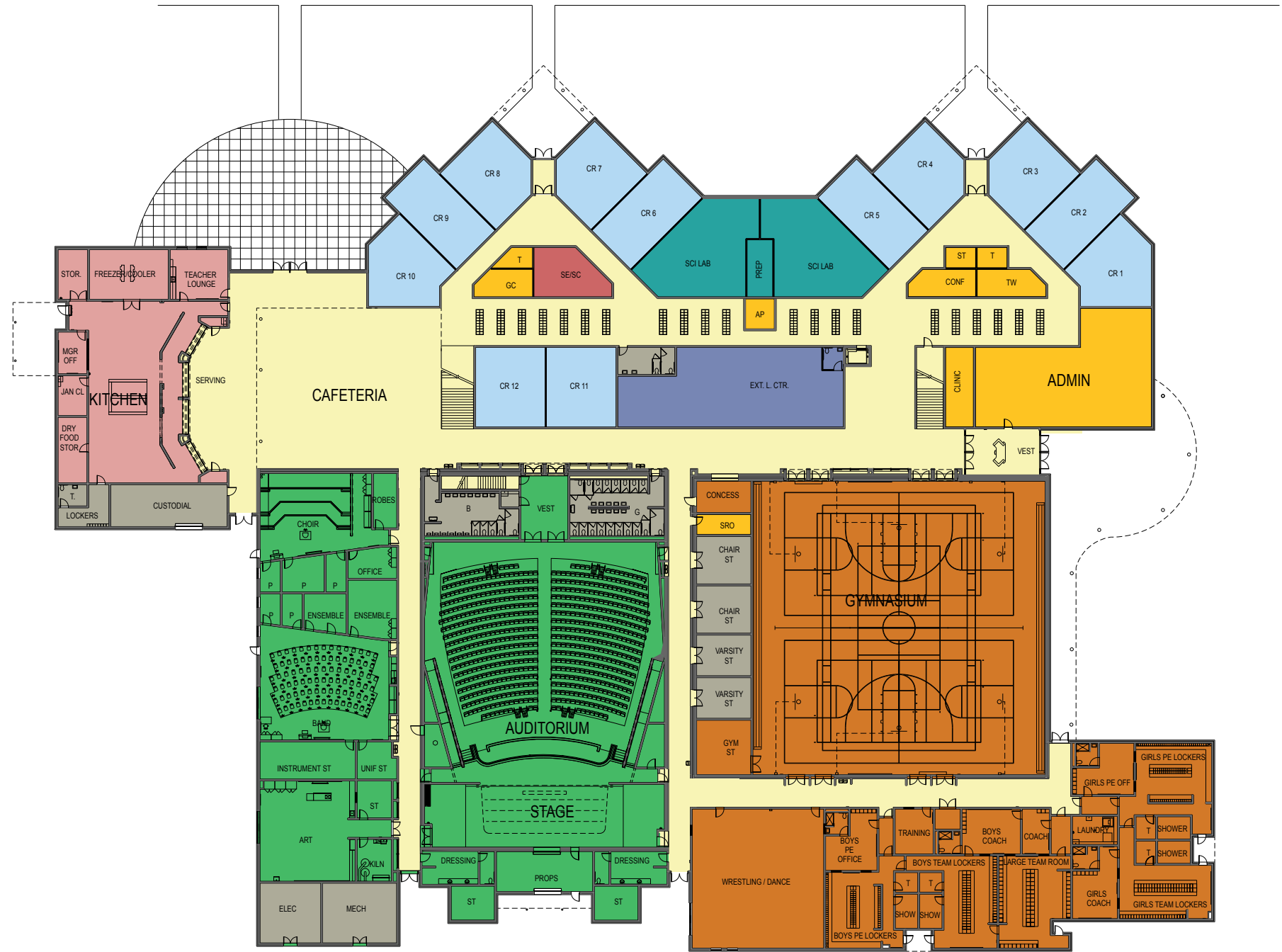




# **UNION HIGH SCHOOL** **Wise County Public Shools**







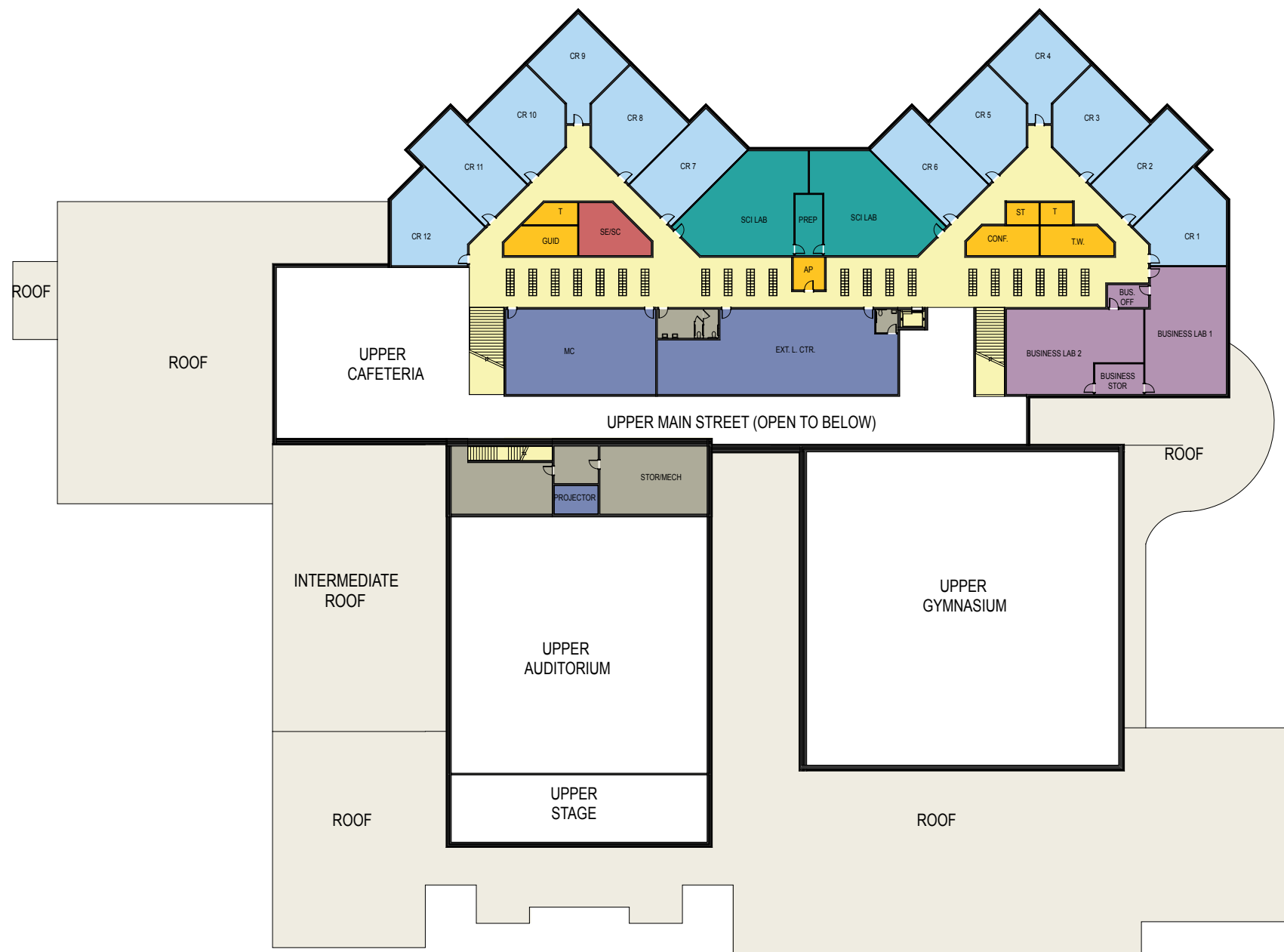
#### LEGEND

- GENERAL CLASSROOMS
- SCIENCE
- FOOD SERVICE
- MEDIA CENTER
- CENTRAL ADMIN & VISITOR CENTER
- SPECIAL EDUCATION
- PHYSICAL EDUCATION / ATHLETICS
- FINE ARTS CENTER
- ENGINEERING, INDUSTRIAL & TECHNICAL ED.
- CIRCULATION
- BUILDING SERVICES / RESTROOMS

## UNION HIGH SCHOOL FIRST FLOOR PLAN

Wise County Public Shools





#### LEGEND

- GENERAL CLASSROOMS
- SCIENCE
- FOOD SERVICE
- MEDIA CENTER
- CENTRAL ADMIN & VISITOR CENTER
- SPECIAL EDUCATION
- PHYSICAL EDUCATION / ATHLETICS
- FINE ARTS CENTER
- ENGINEERING, INDUSTRIAL & TECHNICAL ED.
- CIRCULATION
- BUILDING SERVICES / RESTROOMS

## UNION HIGH SCHOOL SECOND FLOOR PLAN

Wise County Public Shools





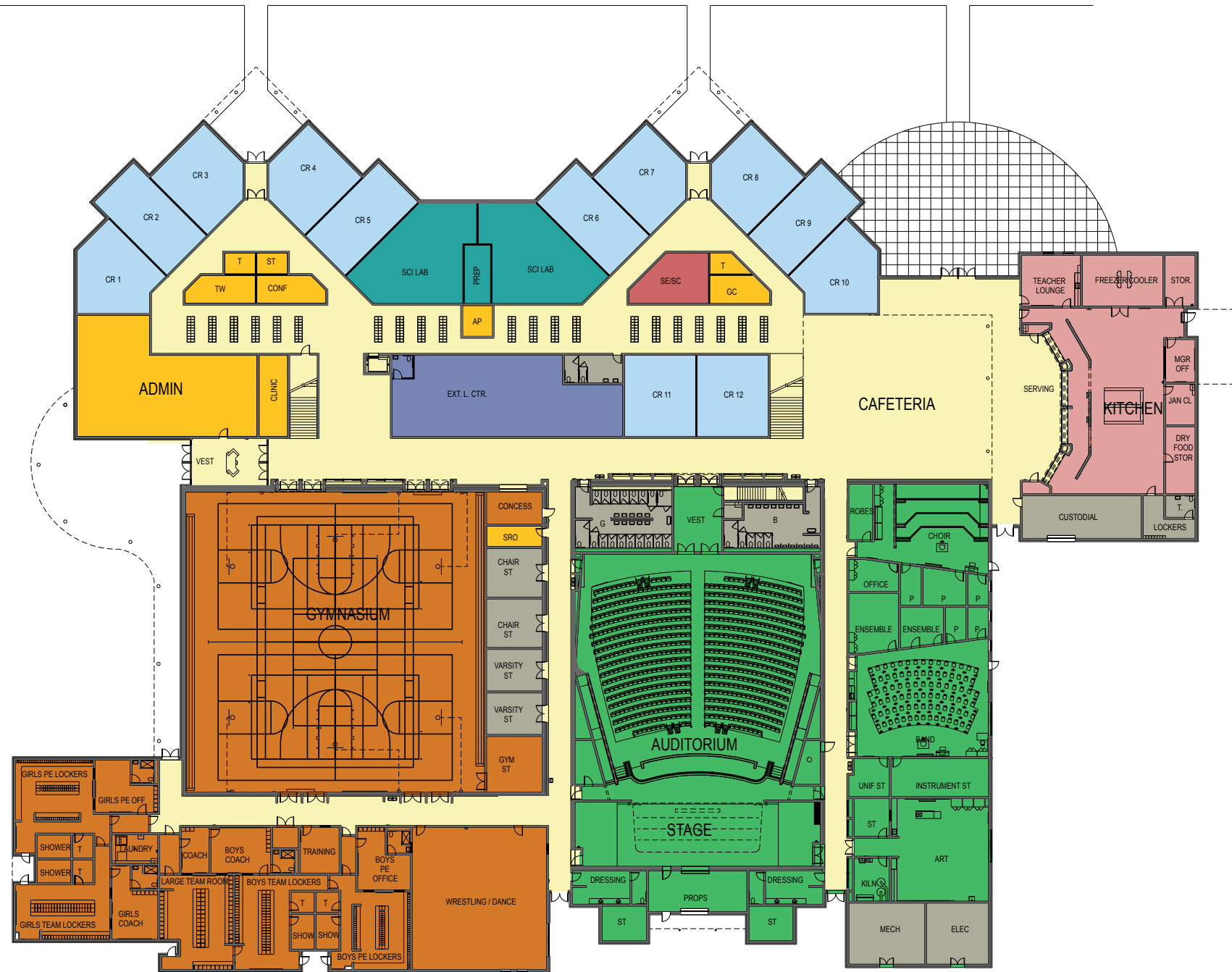


# **CENTRAL HIGH SCHOOL - OFFICE SITE #1**

**Wise County Public Shools**





**LEGEND**

- GENERAL CLASSROOMS
- SCIENCE
- FOOD SERVICE
- MEDIA CENTER
- CENTRAL ADMIN & VISITOR CENTER
- SPECIAL EDUCATION
- PHYSICAL EDUCATION / ATHLETICS
- FINE ARTS CENTER
- ENGINEERING, INDUSTRIAL & TECHNICAL ED.
- CIRCULATION
- BUILDING SERVICES / RESTROOMS

## CENTRAL HIGH SCHOOL - OFFICE SITE #1

### FIRST FLOOR PLAN

Wise County Public Shools



**S.B. BALLARD**  
CONSTRUCTION  
COMPANY



**MAXIM**  
ENGINEERING, INC.





# **CENTRAL HIGH SCHOOL - OFFICE SITE #2** **SECOND FLOOR PLAN**

**Wise County Public Shools**



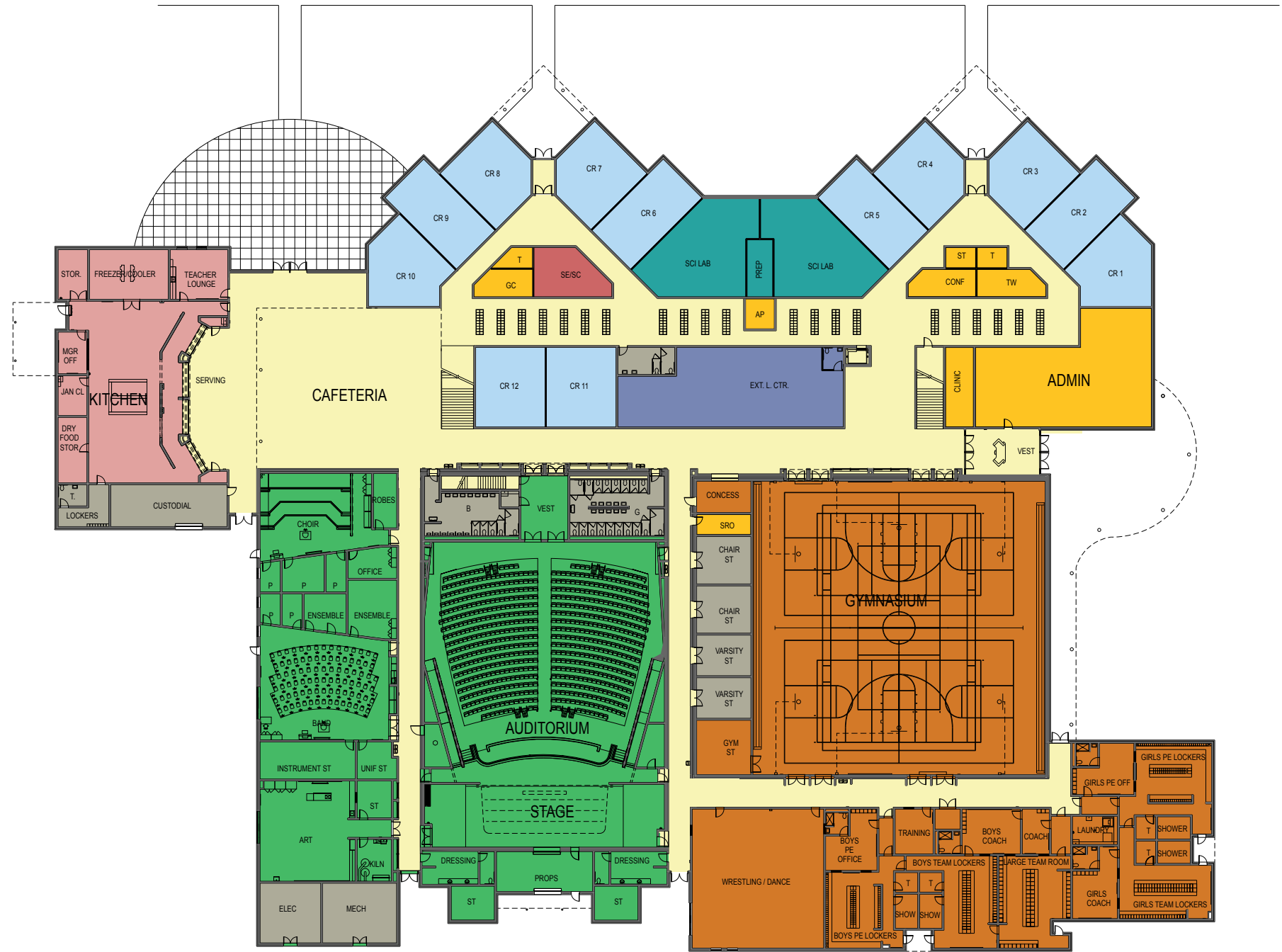


# CENTRAL HIGH SCHOOL - OFFICE SITE #2

Wise County Public Shools







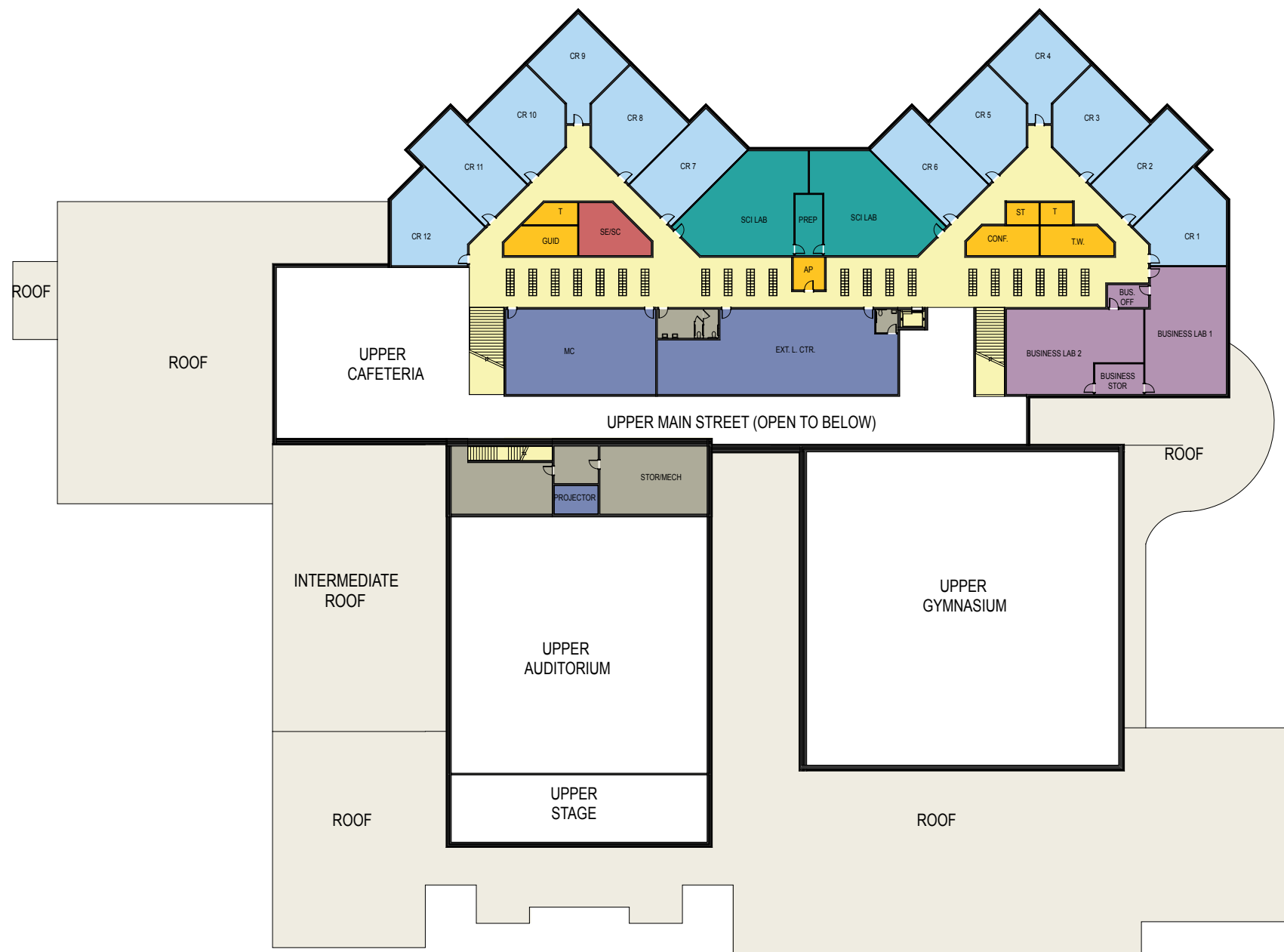
#### LEGEND

- GENERAL CLASSROOMS
- SCIENCE
- FOOD SERVICE
- MEDIA CENTER
- CENTRAL ADMIN & VISITOR CENTER
- SPECIAL EDUCATION
- PHYSICAL EDUCATION / ATHLETICS
- FINE ARTS CENTER
- ENGINEERING, INDUSTRIAL & TECHNICAL ED.
- CIRCULATION
- BUILDING SERVICES / RESTROOMS

## CENTRAL HIGH SCHOOL - OFFICE SITE #2 FIRST FLOOR PLAN

Wise County Public Shools





#### LEGEND

- GENERAL CLASSROOMS
- SCIENCE
- FOOD SERVICE
- MEDIA CENTER
- CENTRAL ADMIN & VISITOR CENTER
- SPECIAL EDUCATION
- PHYSICAL EDUCATION / ATHLETICS
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- ENGINEERING, INDUSTRIAL & TECHNICAL ED.
- CIRCULATION
- BUILDING SERVICES / RESTROOMS

## CENTRAL HIGH SCHOOL - OFFICE SITE #2 SECOND FLOOR PLAN

Wise County Public Shools





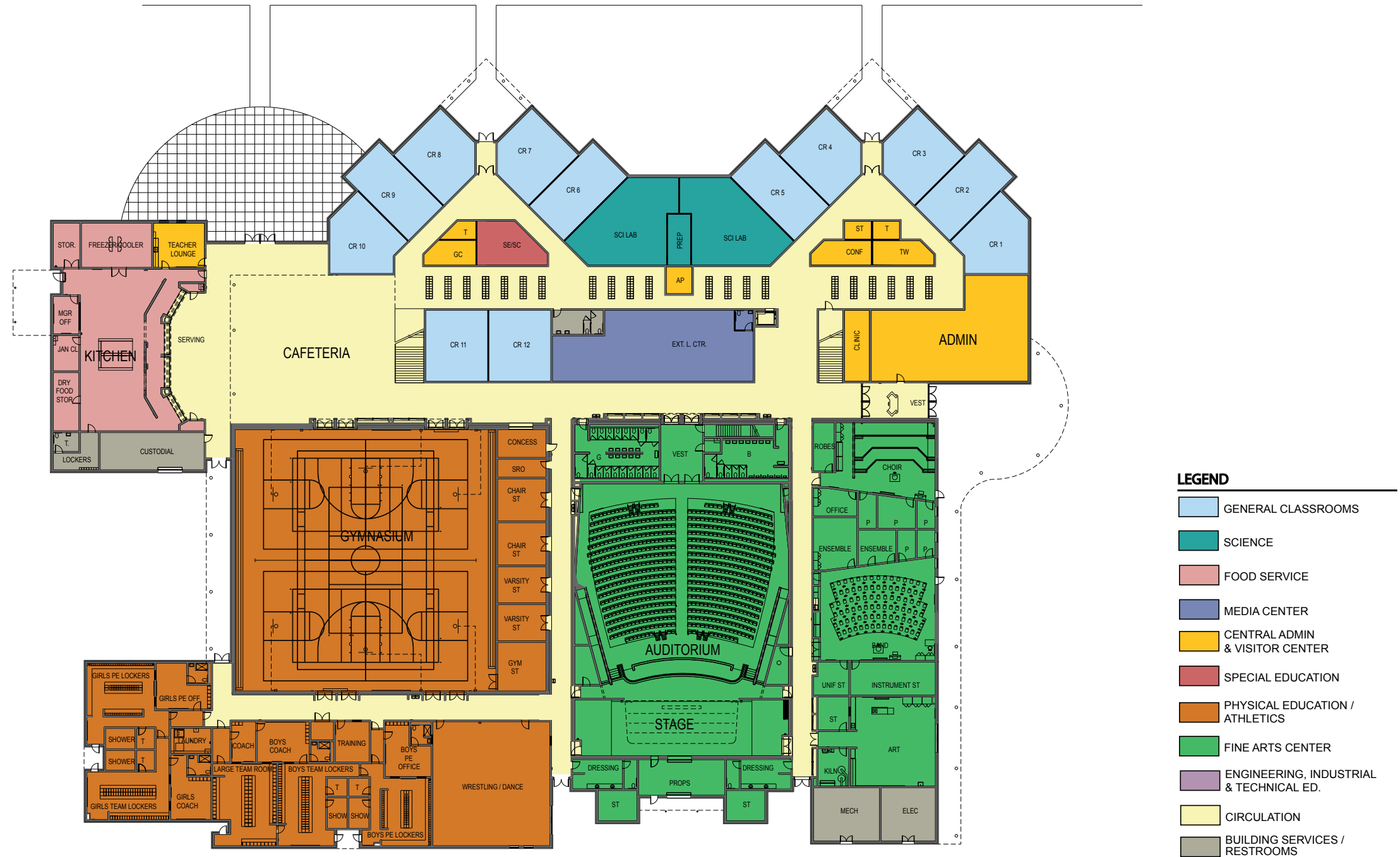


# **CENTRAL HIGH SCHOOL - J.J. KELLY SITE**

**Wise County Public Shools**







# **CENTRAL HIGH SCHOOL - J.J. KELLY SITE** **FIRST FLOOR PLAN**

**Wise County Public Shools**





The following section contains the S.B. Ballard/RRMM/Maxim team's proposal estimate and associated summaries. This information is summarized in four (4) specific categories described as follows:

**Individual School Cost Summary Sheets:**

Each of these four sheets shows the full price we are proposing for each individual school, one each for the four (4) separate site locations currently being considered by WCPS. They are arranged and described as:

UNION HIGH SCHOOL SITE – Located on the grounds of the existing school campus in Big Stone Gap, Virginia.

CENTRAL HIGH SCHOOL – OFFICE SITE # 1 – Located on the grounds of the existing Education Center complex in Wise, Virginia.

CENTRAL HIGH SCHOOL – OFFICE SITE # 2 – Located on property directly across Lake Street from the Education Center and adjacent to the Vocational technical School in Wise, Virginia.

CENTRAL HIGH SCHOOL – J.J. KELLY SITE – Located on the grounds of the existing school campus in Wise, Virginia.

These cost summary sheets have been prepared to show the full cost of each of these new schools on a per-school basis and represent our proposed price **should the Wise County School Board determine to award one (1) school only to the S.B. Ballard /RRMM/Maxim team.** In addition to the base bid amount shown for each school, each summary sheet includes a list of three (3) deductive alternates for your consideration.

**Two-School Combination Cost Summary Sheets:**

Each of these three sheets shows the full price we are proposing for each possible **combination** of both schools. It provides the Owner with a selection of the three (3) possible scenarios by which a dual award can be made to the S.B. Ballard /RRMM/Maxim team to construct both new schools. They are arranged and described as:

COMBINATION SCENARIO ONE – This includes the construction of the new Union High School on the site of the existing campus, and the new Central High School on the grounds of the existing Education Center.

COMBINATION SCENARIO TWO – This includes the construction of the new Union High School on the site of the existing campus, and the new Central High School on the property adjacent to the existing Vocational Technical School.



COMBINATION SCENARIO THREE – This includes the construction of the new Union High School on the site of the existing campus, and the new Central High School on the site of the existing campus.

These summary sheets have been prepared to show the full cost for each of these combinations and represent our proposal price should Wise County Public Schools determine to award *both schools to the S.B. Ballard RRMM/Maxim team*. In each of these scenarios, a deductive alternate is listed that shows the savings in design and general conditions costs that are available to WCPS in the case of a dual award to our team, plus the three previously provided credits are reconfigured to represent their value with a 2-school award.

#### **Assumptions & Clarifications:**

- We do not include any costs for permits and have assumed that the cost for any county or town permits will be paid for by WCPS if required.
- We include standard demolition of existing building structures and site improvements required to be removed to effect the new construction. We do not include any costs for any hazardous materials surveys or reports, or for any remediation or removal.
- We do not include and costs associated with the design, engineering, power wiring, equipment or installation of any applications associated with A/V systems, Intercommunication systems, Wireless Clock systems, security access systems, or CCTV systems.
- We do not include any costs associated with the design, purchase or installation of any loose furnishings or technology equipment.
- We do not include any costs associated with any highway or other off-site improvements mandated by any local or state jurisdiction.
- We do not include and VDOT surveys or improvements.
- We do not include any utility tap fees or service connection fees.
- Our design and construction pricing is based on both schools having identical floorplans, that the only differences between either school are color selections and minor modifications to finishes, and that both schools are awarded and can be designed and built simultaneously.
- Should the Owner's source of funding for one or both of these schools mandate the use of a Davis-Bacon wage determination, we have utilized General Decision # VA100172 dated 8/19/2011 for 'Building Construction'.

#### **Detailed Estimate Back-up:**

This section contains our estimate back-up summaries for each of the four (4) separately priced and specific school building & site improvements configurations that are required with this project.

While the buildings themselves have been designed by our team to be identical in size and amenities, each of the four potential sites is substantially different from each other. These differences in required applications, approaches and quantities are reflected in these documents.

UNION HIGH SCHOOL  
BIG STONE GAP, VIRGINIA  
121,070 SF

DETAILED SUBMISSION COST ESTIMATE SUMMARY  
SEPTEMBER 23, 2011

**CONSTRUCTION COSTS:**

Building Construction, General Conditions & Inflation Contingency	\$	17,878,773
Demolition, Sitework & Civil Construction	\$	<u>2,406,677</u>
Total Construction Costs	\$	20,285,450

**MISCELLANEOUS PROJECT COSTS:**

Land Survey	Included
Geotechnical Study & Report	Included
Old Dominion Power Service Connection Costs	By Owner
Legal & Public Communication Fees	50,000
Design & Preconstruction Start-up Interest	50,000
A/E Design Services	1,468,000
Program Contingency	By Owner
Construction Testing & Inspections	By Owner
Technology Equipment	By Owner
Loose FF&E	By Owner
Construction Management	<u>By Owner</u>
Total Construction & Miscellaneous without Owner Items	\$ 21,853,450
Total Square Foot Cost without Owner Items	\$ 180.50

**CREDIT ALTERNATES:**

# 1 – Credit if both schools are awarded and can be built simultaneously.	See Combined Price
# 2 – Credit for high-efficiency RTUs in lieu of 4-pipe HVAC.	( \$ 577,500 )
# 3 – Credit to not provide initial design financing.	( \$ 50,000 )
# 4 – Credit to not provide PPEA consultant services.	<u>( \$ 50,000 )</u>
TOTAL AVAILABLE CREDITS	= ( \$ 677,500 )

PRICE WITH ALL CREDITS	=	\$ 21,175,950
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CENTRAL HIGH SCHOOL – OFFICE SITE # 1  
WISE, VIRGINIA  
121,070 SF

DETAILED SUBMISSION COST ESTIMATE SUMMARY  
SEPTEMBER 23, 2011

**CONSTRUCTION COSTS:**

Building Construction, General Conditions & Inflation Contingency	\$	17,859,650
Demolition, Sitework & Civil Construction	\$	<u>2,184,700</u>
Total Construction Costs	\$	20,044,350

**MISCELLANEOUS PROJECT COSTS:**

Land Survey	Included
Geotechnical Study & Report	Included
Old Dominion Power Service Connection Costs	By Owner
Legal & Public Communication Fees	50,000
Design & Preconstruction Start-up Interest	50,000
A/E Design Services	1,468,000
Program Contingency	By Owner
Construction Testing & Inspections	By Owner
Technology Equipment	By Owner
Loose FF&E	By Owner
Construction Management	<u>By Owner</u>
Total Construction & Miscellaneous without Owner Items	\$ 21,612,350
Total Square Foot Cost without Owner Items	\$ 178.51

**CREDIT ALTERNATES:**

# 1 – Credit if both schools are awarded and can be built simultaneously.	See Combined Price
# 2 – Credit for high-efficiency RTUs in lieu of 4-pipe HVAC.	( \$ 577,500 )
# 3 – Credit to not provide initial design financing.	( \$ 50,000 )
# 4 – Credit to not provide PPEA consultant services.	<u>( \$ 50,000 )</u>
TOTAL AVAILABLE CREDITS	= ( \$ 677,500 )

PRICE WITH ALL CREDITS	=	\$ 20,934,850
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CENTRAL HIGH SCHOOL – OFFICE SITE # 2  
WISE, VIRGINIA  
121,070 SF

DETAILED SUBMISSION COST ESTIMATE SUMMARY  
SEPTEMBER 23, 2011

**CONSTRUCTION COSTS:**

Building Construction, General Conditions & Inflation Contingency	\$	17,893,213
Demolition, Sitework & Civil Construction	\$	<u>2,743,387</u>
Total Construction Costs	\$	20,636,600

**MISCELLANEOUS PROJECT COSTS:**

Land Survey	Included
Geotechnical Study & Report	Included
Old Dominion Power Service Connection Costs	By Owner
Legal & Public Communication Fees	50,000
Design & Preconstruction Start-up Interest	50,000
A/E Design Services	1,512,000
Program Contingency	By Owner
Construction Testing & Inspections	By Owner
Technology Equipment	By Owner
Loose FF&E	By Owner
Construction Management	<u>By Owner</u>
Total Construction & Miscellaneous without Owner Items	\$ 22,248,600
Total Square Foot Cost without Owner Items	\$ 183.77

**CREDIT ALTERNATES:**

# 1 – Credit if both schools are awarded and can be built simultaneously.	See Combined Price
# 2 – Credit for high-efficiency RTUs in lieu of 4-pipe HVAC.	( \$ 577,500 )
# 3 – Credit to not provide initial design financing.	( \$ 50,000 )
# 4 – Credit to not provide PPEA consultant services.	<u>( \$ 50,000 )</u>
TOTAL AVAILABLE CREDITS	= ( \$ 677,500 )

PRICE WITH ALL CREDITS	=	\$ 21,571,100
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CENTRAL HIGH SCHOOL – J.J. KELLY SITE  
WISE, VIRGINIA  
121,070 SF

DETAILED SUBMISSION COST ESTIMATE SUMMARY  
SEPTEMBER 23, 2011

**CONSTRUCTION COSTS:**

Building Construction, General Conditions & Inflation Contingency	\$	17,937,657
Demolition, Sitework & Civil Construction	\$	<u>3,281,218</u>
Total Construction Costs	\$	21,218,875

**MISCELLANEOUS PROJECT COSTS:**

Land Survey	Included
Geotechnical Study & Report	Included
Old Dominion Power Service Connection Costs	By Owner
Legal & Public Communication Fees	50,000
Design & Preconstruction Start-up Interest	50,000
A/E Design Services	1,490,000
Program Contingency	By Owner
Construction Testing & Inspections	By Owner
Technology Equipment	By Owner
Loose FF&E	By Owner
Construction Management	<u>By Owner</u>
Total Construction & Miscellaneous without Owner Items	\$ 22,808,875
Total Square Foot Cost without Owner Items	\$ 188.39

**CREDIT ALTERNATES:**

# 1 – Credit if both schools are awarded and can be built simultaneously.	See Combined Price
# 2 – Credit for high-efficiency RTUs in lieu of 4-pipe HVAC.	( \$ 577,500 )
# 3 – Credit to not provide initial design financing.	( \$ 50,000 )
# 4 – Credit to not provide PPEA consultant services.	<u>( \$ 50,000 )</u>
TOTAL AVAILABLE CREDITS	= ( \$ 677,500 )

PRICE WITH ALL CREDITS	=	\$ 22,131,375
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**COMBINATION SCENARIO ONE**  
**UNION & CENTRAL HIGH SCHOOLS**  
**EXISTING UNION SITE & CENTRAL OFFICE # 1 SITE**

**DETAILED SUBMISSION COST ESTIMATE SUMMARY**  
**SEPTEMBER 23, 2011**

**CONSTRUCTION COSTS:**

Union H.S. Bldg. Construction, General Conditions & Inflation Contingency	\$	17,878,773
Central H.S. Bldg. Construction, General Conditions & Inflation Contingency	\$	17,859,650
Union H.S. Demolition, Sitework & Civil Construction	\$	2,406,677
Central H.S. Demolition, Sitework & Civil Construction	\$	<u>2,184,700</u>
 Total Construction Costs	 \$	 40,329,800

**MISCELLANEOUS PROJECT COSTS:**

Land Survey	Included
Geotechnical Study & Report	Included
Old Dominion Power Service Connection Costs	By Owner
Legal & Public Communication Fees	100,000
Design & Preconstruction Start-up Interest	100,000
A/E Design Services	2,936,000
Program Contingency	By Owner
Construction Testing & Inspections	By Owner
Technology Equipment	By Owner
Loose FF&E	By Owner
Construction Management	<u>By Owner</u>
 Total Construction & Miscellaneous without Owner Items	 \$ 43,465,800

**CREDIT ALTERNATES:**

# 1 – Credit if both schools are awarded and can be built simultaneously.	( \$	776,700 )
# 2 – Credit for high-efficiency RTUs in lieu of 4-pipe HVAC at both schools.	( \$	1,155,000 )
# 3 – Credit to delete initial design financing for both schools.	( \$	100,000 )
# 4 – Credit to delete PPEA consultant services for both schools.	( \$	<u>100,000 )</u>
 TOTAL AVAILABLE CREDITS	 =	 ( \$ 2,131,700 )

<b>SCENARIO ONE PRICE WITH ALL CREDITS</b>	<b>=</b>	<b>\$ 41,334,100</b>
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**COMBINATION SCENARIO TWO**  
**UNION & CENTRAL HIGH SCHOOLS**  
**EXISTING UNION SITE & CENTRAL OFFICE # 2 SITE**

**DETAILED SUBMISSION COST ESTIMATE SUMMARY**  
**SEPTEMBER 23, 2011**

**CONSTRUCTION COSTS:**

Union H.S. Bldg. Construction, General Conditions & Inflation Contingency	\$	17,878,773
Central H.S. Bldg. Construction, General Conditions & Inflation Contingency	\$	17,893,213
Union H.S. Demolition, Sitework & Civil Construction	\$	2,406,677
Central H.S. Demolition, Sitework & Civil Construction	\$	<u>2,743,387</u>
 Total Construction Costs	 \$	 40,922,050

**MISCELLANEOUS PROJECT COSTS:**

Land Survey	Included
Geotechnical Study & Report	Included
Old Dominion Power Service Connection Costs	By Owner
Legal & Public Communication Fees	100,000
Design & Preconstruction Start-up Interest	100,000
A/E Design Services	2,980,000
Program Contingency	By Owner
Construction Testing & Inspections	By Owner
Technology Equipment	By Owner
Loose FF&E	By Owner
Construction Management	<u>By Owner</u>
 Total Construction & Miscellaneous without Owner Items	 \$ 44,102,050

**CREDIT ALTERNATES:**

# 1 – Credit if both schools are awarded and can be built simultaneously.	( \$	776,700 )
# 2 – Credit for high-efficiency RTUs in lieu of 4-pipe HVAC at both schools.	( \$	1,155,000 )
# 3 – Credit to not provide initial design financing for either school.	( \$	100,000 )
# 4 – Credit to not provide PPEA consultant services for either school.	( \$	<u>100,000 )</u>
 TOTAL AVAILABLE CREDITS	 =	 ( \$ 2,131,700 )

<b>SCENARIO TWO PRICE WITH ALL CREDITS</b>	<b>=</b>	<b>\$ 41,970,350</b>
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**COMBINATION SCENARIO THREE**  
**UNION & CENTRAL HIGH SCHOOLS**  
**EXISTING UNION SITE & EXISTING JJ KELLY SITE**

**DETAILED SUBMISSION COST ESTIMATE SUMMARY**  
**SEPTEMBER 23, 2011**

**CONSTRUCTION COSTS:**

Union H.S. Bldg. Construction, General Conditions & Inflation Contingency	\$	17,878,773
Central H.S. Bldg. Construction, General Conditions & Inflation Contingency	\$	17,937,657
Union H.S. Demolition, Sitework & Civil Construction	\$	2,406,677
Central H.S. Demolition, Sitework & Civil Construction	\$	<u>3,281,218</u>
 Total Construction Costs	 \$	 41,504,325

**MISCELLANEOUS PROJECT COSTS:**

Land Survey	Included
Geotechnical Study & Report	Included
Old Dominion Power Service Connection Costs	By Owner
Legal & Public Communication Fees	100,000
Design & Preconstruction Start-up Interest	100,000
A/E Design Services	2,958,000
Program Contingency	By Owner
Construction Testing & Inspections	By Owner
Technology Equipment	By Owner
Loose FF&E	By Owner
Construction Management	<u>By Owner</u>
 Total Construction & Miscellaneous without Owner Items	 \$ 44,662,325

**CREDIT ALTERNATES:**

# 1 – Credit if both schools are awarded and can be built simultaneously.	( \$	776,700 )
# 2 – Credit for high-efficiency RTUs in lieu of 4-pipe HVAC at both schools.	( \$	1,155,000 )
# 3 – Credit to not provide initial design financing for either school.	( \$	100,000 )
# 4 – Credit to not provide PPEA consultant services for either school.	( \$	<u>100,000 )</u>
 TOTAL AVAILABLE CREDITS	 =	 ( \$ 2,131,700 )

**SCENARIO THREE PRICE WITH ALL CREDITS = \$ 42,530,625**

<b>Union High School - Big Stone Gap, VA</b>				<b>121,070</b>	<b>TOTAL COST</b>	
<b>PPEA Phase 2 Submission - 9.23.11</b>				<b>SF</b>	<b>21,753,450</b>	
<b>Base Bid</b>		Quantity/Factor	Quote	Cost per S. F.	Proposed Contractor	Comments
<b>DIVISION 1 -</b>						
	General Conditions		\$ 1,398,658	11.55	SBBCC	
	Builders Risk		\$ 28,564	0.24	SBBCC	
	Building Permit		\$ -	0.00	Wise County	Not Required
	Legal Fees		\$ -	0.00	SBBCC	
	Preconstruction/Design Interest Expense		\$ -	0.00	SBBCC	
	Final Cleaning		\$ 54,482	0.45	SBBCC	
	Architectural/Structural/MEP Engineering		\$ 1,260,000	10.41	RRMM	
	Building Survey & Layout		\$ 90,000	0.74	SBBCC	
<b>DIVISION 2 EXISTING MATERIALS</b>						
02 15 20	Site Demolition		\$ 141,947	1.17	SBBCC	
02 20 50	Building Demolition		\$ 300,000	2.48	SBBCC	
02 20 60	Hazaradous Materials Report & Abatement		\$ -	0.00	WCPS	By Owner
<b>DIVISION 3 - CONCRETE</b>						
03 30 00	Building Cast-in-Place Concrete		\$ 819,644	6.77	SBBCC	
03 45 00	Architectural Precast Concrete - 5% Exterior Skin		\$ 80,188	0.66	SBBCC	
<b>DIVISION 4 - MASONRY</b>						
04 20 00	Exterior CMU Walls w/ VB, Insulation & Brick Veneer		\$ 958,238	7.91	SBBCC	
04 22 10	Interior CMU Partitions		\$ 865,845	7.15	SBBCC	
04 25 50	Masonry Rebar - Materials Only		\$ 78,030	0.64	SBBCC	
<b>DIVISION 5 - METALS</b>						
05 12 00	Structural Steel Framing - Full Steel Frame		\$ 1,875,374	15.49	SBBCC	
05 12 10	Steel Framing & Decking @ Canopies		\$ 65,614	0.54	SBBCC	
05 51 00	Metal Metals - Stairs, Lintels, Railings		\$ -	0.00	SBBCC	
<b>DIVISION 6 - WOODS, PLASTICS, AND COMPOSITES</b>						
06 10 00	Rough Carpentry - Materials		\$ 51,835	0.43	SBBCC	
06 10 05	Rough Carpentry - Installation		\$ 44,430	0.37	SBBCC	
06 20 23	Interior Finish Carpentry		\$ 7,152	0.06	SBBCC	
06 20 25	Laminate Tops @ Lockers		\$ 14,850	0.12	SBBCC	
<b>DIVISION 7 - THERMAL AND MOISTURE PROTECTION</b>						
07 13 26	Waterproofing @ Elevator Pit		\$ 1,820	0.02	SBBCC	
07 42 43	Aluminum Wall Panels - 10% Exterior Skin		\$ 120,197	0.99	SBBCC	
07 42 45	Aluminum Soffit @ Canopies		\$ 69,854	0.58	SBBCC	
07 52 16	TPO Membrane Roofing		\$ 851,547	7.03	SBBCC	
07 65 50	Exterior Skin Consultant		\$ 22,500	0.19	SBBCC	
07 84 46	Caulking & Sealants		\$ 21,793	0.18	SBBCC	
07 95 00	Expansion Control Joints		\$ 18,425	0.15	SBBCC	
<b>DIVISION 8 - OPENINGS</b>						
08 11 13	HM Door Frames, HM/SCW Doors & Door Hardware		\$ 213,400	1.76	SBBCC	
08 11 15	HM Borrowed Lites (48" x 48" x 72 EA)		\$ 34,560	0.29	SBBCC	
08 33 23	Non-Insulated Coiling Grilles - 14' x 5'		\$ 7,000	0.06	SBBCC	
08 33 25	Insulated OH Doors - 10' x 8'		\$ 7,800	0.06	SBBCC	
08 41 13	Aluminum Entrances & Windows - 25% Exterior Skin		\$ 776,030	6.41	SBBCC	

Union High School - Big Stone Gap, VA				121,070	TOTAL COST
PPEA Phase 2 Submission - 9.23.11				SF	21,753,450
Base Bid	Quantity/Factor	Quote	Cost per S. F.	Proposed Contractor	Comments
<b>DIVISION 9 - FINISHES</b>					
09 22 10	GWB 6" 1-Hour Rated w/ Acoustic Insulation	\$ 75,322	0.62	SBBCC	
09 22 15	Suspended Plaster Ceilings @ Locker Rooms	\$ 66,623	0.55	SBBCC	
09 30 00	Ceramic Tile Floors @ Restrooms	\$ 30,186	0.25	SBBCC	
09 30 05	Ceramic Tile @ Restroom Wet Walls (60")	\$ 17,425	0.14	SBBCC	
09 30 10	Porcelain Tile @ Dining/Food Court & Event Lobbies	\$ 99,540	0.82	SBBCC	
09 30 15	Quarry Tile Floors @ Kitchen & Prep Areas	\$ 56,398	0.47	SBBCC	
09 51 13	Acoustical Panel Ceilings	\$ 172,235	1.42	SBBCC	
09 65 13	Carpet Tile, Resilient Tile, Base & Accessories	\$ 149,178	1.23	SBBCC	
09 65 66	Wood Flooring @ Gym & Stage	\$ 131,634	1.09	SBBCC	
09 65 70	Resilient Athletic Flooring @ Wrestling Room	\$ 28,132	0.23	SBBCC	
09 66 23	Acid-Resistant Resilient Flooring @ Science Labs	\$ 25,208	0.21	SBBCC	
09 66 45	Epoxy Flooring @ Locker Rooms	\$ 61,688	0.51	SBBCC	
09 84 13	Acoustic Clouds @ Auditorium, Dining & Music Center	\$ 36,330	0.30	SBBCC	
09 91 00	Painting	\$ 98,067	0.81	SBBCC	
<b>DIVISION 10 - SPECIALTIES</b>					
10 11 00	Visual Display Surfaces	\$ 41,607	0.34	SBBCC	
10 12 00	Display Cases	\$ 17,280	0.14	SBBCC	
10 14 00	Signage Per Code Only - No Exterior or Specialty Signs	\$ 38,742	0.32	SBBCC	
10 21 13	Solid Color Reinforced Composite Toilet Compartments	\$ 27,000	0.22	SBBCC	
10 21 15	Shower Doors	\$ 2,800	0.02	SBBCC	
10 28 00	Toilet & Bath Accessories	\$ 18,900	0.16	SBBCC	
10 28 10	Curtaintracks & Curtains @ Clinic	\$ 1,300	0.01	SBBCC	
10 44 13	Fire Extinguisher Cabinets & Extinguishers	\$ 10,500	0.09	SBBCC	
10 51 00	Scholastic Lockers - 3'0" Height	\$ 83,160	0.69	SBBCC	
10 51 13	Athletic Lockers - Double-Stacked Units	\$ 49,400	0.41	SBBCC	
10 75 00	Flagpoles	\$ 6,540	0.05	SBBCC	
10 82 13	Exterior Grilles & Louvers	\$ 14,600	0.12	SBBCC	
<b>DIVISION 11 - EQUIPMENT</b>					
11 40 00	Foodservice Equipment	\$ 339,000	2.80	SBBCC	
11 66 23	Gymnasium Equipment	\$ 67,083	0.55	SBBCC	
11 68 10	Football Goal Posts & Pylons	\$ 16,885	0.14	SBBCC	
<b>DIVISION 12 - FURNISHINGS</b>					
12 32 16	Institutional, Laboratory Casework & Equipment	\$ 227,000	1.87	SBBCC	
12 48 13	Floor Mats & Frames	\$ 13,125	0.11	SBBCC	
12 66 00	Gymnasium Seating	\$ 127,500	1.05	SBBCC	
12 68 50	Auditorium Seating	\$ 135,713	1.12	SBBCC	
12 68 52	Stage Curtain, Rigging & Lighting Package	\$ 236,899	1.96	SBBCC	
<b>DIVISION 13 - SPECIAL CONSTRUCTION</b>					
<b>DIVISION 14 - CONVEYING SYSTEMS</b>					
14 24 00	Hydraulic Elevators	\$ 46,440	0.38	SBBCC	
<b>DIVISION 21 - FIRE SUPPRESSION</b>					
21 00 00	Fire Suppression Systems - Complete	\$ 201,945	1.67	SBBCC	
<b>DIVISION 22 - PLUMBING</b>					

	<b>Union High School - Big Stone Gap, VA</b>			<b>121,070</b>	<b>TOTAL COST</b>	
	<b>PPEA Phase 2 Submission - 9.23.11</b>			<b>SF</b>	<b>21,753,450</b>	
<b>Base Bid</b>		Quantity/Factor	Quote	Cost per S. F.	Proposed Contractor	Comments
22 00 00	Plumbing Systems - Complete		\$ -	0.00	SBBCC	Included in HVAC
<b>DIVISION 25 - HVAC</b>						
23 00 00	HVAC Systems - Complete		\$ 3,087,285	25.50	SBBCC	
<b>DIVISION 25 - INTEGRATED AUTOMATION</b>						
<b>DIVISION 26 - ELECTRICAL</b>						
26 00 00	Electrical Systems - Complete		\$ 1,532,746	12.66	SBBCC	
26 00 10	Entrance Drive & Parking Lot Pole Lights		\$ 84,000	0.69	SBBCC	
26 10 15	Temporary Power & Lighting		\$ 52,500	0.43	SBBCC	
26 10 20	Start Up Power		\$ 39,000	0.32	SBBCC	
<b>DIVISION 27 COMMUNICATIONS</b>						
27 51 20	Cafeteria/Music Sound System		\$ -	0.00	WCPS	By Owner
27 51 21	In-Wall Sound System / FM Hearing Assist System		\$ -	0.00	WCPS	By Owner
27 51 23	Educational Intercommunications & Program Systems		\$ -	0.00	WCPS	By Owner
27 53 13	GPS Wireless Clock System		\$ -	0.00	WCPS	By Owner
<b>DIVISION 28 ELECTRONIC SAFETY AND SECURITY</b>						
28 05 00	Common Work Results for Electronic Safety & Security		\$ -	0.00	SBBCC	
28 05 13	Conductors & Cables for Safety Systems		\$ -	0.00	SBBCC	
28 31 11	Digital Addressable Fire Alarm System		\$ -	0.00	SBBCC	
28 50 00	Card Access / CCTV / Intrusion Detection Security System		\$ -	0.00	WCPS	By Owner
<b>DIVISION 31 EARTHWORK</b>						
31 10 05	Civil Engineering		\$ 183,000	1.51	Maxim	
31 10 10	Geotechnical Survey & Report		\$ 25,000	0.21	Maxim	
31 20 00	Erosion Control		\$ 21,760	0.18	SBBCC/Maxim	
31 20 01	Temporary Construction Entrance & Ring Road		\$ 93,624	0.77	SBBCC/Maxim	
31 20 02	Construction Entrance Wash Station		\$ 8,200	0.07	SBBCC/Maxim	
31 20 04	Clear & Grub - Trees @ SE Corner		\$ 16,800	0.14	SBBCC/Maxim	
31 20 05	Cut/Fill - Rough Grade - Bldg. Pad & SWM Pond		\$ 126,630	1.05	SBBCC/Maxim	
31 20 10	Fine Grade - Bldg. Pad, Pond & Demolished Paving		\$ 47,921	0.40	SBBCC/Maxim	
31 20 12	Detention Basin, Swales, & Pond		\$ 79,200	0.65	SBBCC/Maxim	
31 31 16	Termite Control		\$ 7,690	0.06	SBBCC	
<b>DIVISION 32 EXTERIOR IMPROVEMENTS</b>						
32 12 10	Highway/Traffic Improvements - VDOT Requirements		\$ -	0.00	WCPS	By Owner
32 12 15	Asphalt Paving - 6/3/1.5 Drivelanes & Bus Loop		\$ 390,580	3.23	SBBCC/Maxim	
32 12 16	Asphalt Paving - 6/2/1.5 Vehicular Parking		\$ 254,823	2.10	SBBCC/Maxim	
32 12 20	Pavement Line Stripping & Painted Markings		\$ 7,024	0.06	SBBCC/Maxim	
32 12 25	Parking Area Signage		\$ 1,800	0.01	SBBCC/Maxim	
32 20 10	Concrete Entrance Aprons		\$ 28,200	0.23	SBBCC/Maxim	
32 31 05	Concrete Curb/Gutter - 18"		\$ 115,092	0.95	SBBCC/Maxim	
32 31 10	Concrete Paving - 4/4 Pedestrian Walkways		\$ 56,128	0.46	SBBCC/Maxim	
32 31 15	Concrete Paving - 8/6 Vehicular & Dumpster Pads		\$ 7,533	0.06	SBBCC/Maxim	
32 50 50	Chain Link Fence @ Detention Pond (780' x 6')		\$ 44,928	0.37	SBBCC/Maxim	
32 92 00	Seed/Fertilize/Mulch		\$ 25,390	0.21	SBBCC/Maxim	
32 93 00	Trees/Shrubs/Mulch		\$ 96,440	0.80	SBBCC/Maxim	
32 94 10	Irrigation @ Landscaped Areas		\$ 67,508	0.56	SBBCC/Maxim	



	<b>Union High School - Big Stone Gap, VA</b>			<b>121,070</b>	<b>TOTAL COST</b>	
	<b>PPEA Phase 2 Submission - 9.23.11</b>			<b>SF</b>	<b>21,753,450</b>	
<b>Base Bid</b>		Quantity/Factor	Quote	Cost per S. F.	Proposed Contractor	Comments
33 95 00	Site Furnishings - Benches, Trash Recepts., Bike Racks		\$ 20,250	0.17	SBBCC/Maxim	
<b>DIVISION 33 UTILITIES</b>						
33 41 01	12" HDPE Piping @ Building Perimeter		\$ 31,295	0.26	SBBCC/Maxim	
33 41 02	18" RCP Piping		\$ 164,713	1.36	SBBCC/Maxim	
33 41 03	24" RCP Piping		\$ 33,051	0.27	SBBCC/Maxim	
33 41 04	Drop Inlets		\$ 98,000	0.81	SBBCC/Maxim	
33 41 05	Catch Basins		\$ 7,800	0.06	SBBCC/Maxim	
33 41 06	Storm Manholes		\$ 7,000	0.06	SBBCC/Maxim	
33 41 10	End Structures		\$ 16,500	0.14	SBBCC/Maxim	
33 42 01	8" Water Line Main		\$ 2,250	0.02	SBBCC/Maxim	
33 42 02	8" Tap Sleeve & Fittings		\$ 5,440	0.04	SBBCC/Maxim	
33 42 03	8" Gate Valve w/ Box		\$ 3,227	0.03	SBBCC/Maxim	
33 42 04	8" Meter Vault		\$ 5,000	0.04	SBBCC/Maxim	
33 42 12	Fire Hydrants		\$ 7,000	0.06	SBBCC/Maxim	
33 42 15	FDC Connections		\$ 2,500	0.02	SBBCC/Maxim	
33 44 10	8" Sanitary Sewer Line		\$ 45,933	0.38	SBBCC/Maxim	
33 44 15	Sanitary Sewer Manholes		\$ 17,500	0.14	SBBCC/Maxim	
	Subtotal		\$ 20,019,423	165.35		
2.50%	Inflation Contingency		\$ 500,486	4.13		
5.00%	Overhead & Profit		\$ 1,000,971	8.27		
	Bond		\$ 197,820	1.63		
	Business License		\$ 34,750	0.29		
	Total Base Bid		\$ 21,753,450	179.68		
	<b>Building Construction Costs &amp; General Conditions</b>		<b>\$ 17,878,773</b>	147.67		
	<b>Site &amp; Building Demolition</b>		<b>\$ 441,947</b>	3.65		
	<b>Site Improvements</b>		<b>\$ 1,964,730</b>	16.23		
	<b>A/E Fees</b>		<b>\$ 1,468,000</b>	12.13		
	<b>TOTAL PROJECT PRICE</b>		<b>\$ 21,753,450</b>	179.68		

<b>Central High School - Wise, VA - Office Site # 1</b>				<b>121,070</b>	<b>TOTAL COST</b>	
<b>PPEA Phase 2 Submission - 9.23.11</b>				<b>SF</b>	<b>21,512,350</b>	
<b>Base Bid</b>		Quantity/Factor	Quote	Cost per S. F.	Proposed Contractor	Comments
<b>DIVISION 1 - GENERAL REQUIREMENTS</b>						
	General Conditions		\$ 1,398,658	11.55	SBBCC	
	Builders Risk		\$ 28,538	0.24	SBBCC	
	Building Permit		\$ -	0.00	Wise County	Not Required
	Legal Fees		\$ -	0.00	SBBCC	
	Preconstruction/Design Interest Expense		\$ -	0.00	SBBCC	
	Final Cleaning		\$ 54,482	0.45	SBBCC	
	Architectural/Structural/MEP Engineering		\$ 1,260,000	10.41	RRMM	
	Building Survey & Layout		\$ 90,000	0.74	SBBCC	
<b>DIVISION 2 EXISTING MATERIALS</b>						
02 15 20	Site Demolition		\$ 79,946	0.66	SBBCC	
02 20 50	Building Demolition		\$ 420,000	3.47	SBBCC	
02 20 60	Hazardous Materials Report & Abatement		\$ -	0.00	WCPS	By Owner
<b>DIVISION 3 - CONCRETE</b>						
03 30 00	Building Cast-in-Place Concrete		\$ 819,644	6.77	SBBCC	
03 45 00	Architectural Precast Concrete - 5% Exterior Skin		\$ 80,188	0.66	SBBCC	
<b>DIVISION 4 - MASONRY</b>						
04 20 00	Exterior CMU Walls w/ VB, Insulation & Brick Veneer		\$ 958,238	7.91	SBBCC	
04 22 10	Interior CMU Partitions		\$ 865,845	7.15	SBBCC	
04 25 50	Masonry Rebar - Materials Only		\$ 78,030	0.64	SBBCC	
<b>DIVISION 5 - METALS</b>						
05 12 00	Structural Steel Framing - Full Steel Frame		\$ 1,875,374	15.49	SBBCC	
05 12 10	Steel Framing & Decking @ Canopies		\$ 65,614	0.54	SBBCC	
05 51 00	Metal Metals - Stairs, Lintels, Railings		\$ -	0.00	SBBCC	
<b>DIVISION 6 - WOODS, PLASTICS, AND COMPOSITES</b>						
06 10 00	Rough Carpentry - Materials		\$ 51,835	0.43	SBBCC	
06 10 05	Rough Carpentry - Installation		\$ 44,430	0.37	SBBCC	
06 20 23	Interior Finish Carpentry		\$ 7,152	0.06	SBBCC	
06 20 25	Laminate Tops @ Lockers		\$ 14,850	0.12	SBBCC	
<b>DIVISION 7 - THERMAL AND MOISTURE PROTECTION</b>						
07 13 26	Waterproofing @ Elevator Pit		\$ 1,820	0.02	SBBCC	
07 42 43	Composite Wall Panels - 10% Exterior Skin		\$ 120,197	0.99	SBBCC	
07 42 45	Aluminum Soffit @ Canopies		\$ 69,854	0.58	SBBCC	
07 52 16	TPO Membrane Roofing		\$ 851,547	7.03	SBBCC	
07 65 50	Exterior Skin Consultant		\$ 22,500	0.19	SBBCC	
07 84 46	Caulking & Sealants		\$ 21,793	0.18	SBBCC	
07 95 00	Expansion Control Joints		\$ 18,425	0.15	SBBCC	
<b>DIVISION 8 - OPENINGS</b>						
08 11 13	HM Door Frames, HM/SCW Doors & Door Hardware		\$ 213,400	1.76	SBBCC	
08 11 15	HM Borrowed Lites (48" x 48" x 72 EA)		\$ 34,560	0.29	SBBCC	
08 33 23	Non-Insulated Coiling Grilles - 14' x 5'		\$ 7,000	0.06	SBBCC	
08 33 25	Insulated OH Doors - 10' x 8'		\$ 7,800	0.06	SBBCC	
08 41 13	Aluminum Entrances & Windows - 25% Exterior Skin		\$ 776,030	6.41	SBBCC	

Central High School - Wise, VA - Office Site # 1				121,070	TOTAL COST
PPEA Phase 2 Submission - 9.23.11				SF	21,512,350
Base Bid	Quantity/Factor	Quote	Cost per S. F.	Proposed Contractor	Comments
<b>DIVISION 9 - FINISHES</b>					
09 22 10	GWB 6" 1-Hour Rated w/ Acoustic Insulation	\$ 75,322	0.62	SBBCC	
09 22 15	Suspended Plaster Ceilings @ Locker Rooms	\$ 66,623	0.55	SBBCC	
09 30 00	Ceramic Tile Floors @ Restrooms	\$ 30,186	0.25	SBBCC	
09 30 05	Ceramic Tile @ Restroom Wet Walls (60")	\$ 17,425	0.14	SBBCC	
09 30 10	Porcelain Tile @ Dining/Food Court & Event Lobbies	\$ 99,540	0.82	SBBCC	
09 30 15	Quarry Tile Floors @ Kitchen & Prep Areas	\$ 56,398	0.47	SBBCC	
09 51 13	Acoustical Panel Ceilings	\$ 172,235	1.42	SBBCC	
09 65 13	Carpet Tile, Resilient Tile, Base & Accessories	\$ 149,178	1.23	SBBCC	
09 65 66	Wood Flooring @ Gym & Stage	\$ 131,634	1.09	SBBCC	
09 65 70	Resilient Athletic Flooring @ Wrestling Room	\$ 28,132	0.23	SBBCC	
09 66 23	Acid-Resistant Resilient Flooring @ Science Labs	\$ 25,208	0.21	SBBCC	
09 66 45	Epoxy Flooring @ Locker Rooms	\$ 61,688	0.51	SBBCC	
09 84 13	Acoustic Clouds @ Auditorium, Dining & Music Center	\$ 36,330	0.30	SBBCC	
09 91 00	Painting	\$ 98,067	0.81	SBBCC	
<b>DIVISION 10 - SPECIALTIES</b>					
10 11 00	Visual Display Surfaces	\$ 41,607	0.34	SBBCC	
10 12 00	Display Cases	\$ 17,280	0.14	SBBCC	
10 14 00	Signage Per Code Only - No Exterior or Specialty Signs	\$ 38,742	0.32	SBBCC	
10 21 13	Solid Color Reinforced Composite Toilet Compartments	\$ 27,000	0.22	SBBCC	
10 21 15	Shower Doors	\$ 2,800	0.02	SBBCC	
10 28 00	Toilet & Bath Accessories	\$ 18,900	0.16	SBBCC	
10 28 10	Curtaintracks & Curtains @ Clinic	\$ 1,300	0.01	SBBCC	
10 44 13	Fire Extinguisher Cabinets & Extinguishers	\$ 10,500	0.09	SBBCC	
10 51 00	Scholastic Lockers - 3'0" Height	\$ 83,160	0.69	SBBCC	
10 51 13	Athletic Lockers - Double-Stacked Units	\$ 49,400	0.41	SBBCC	
10 75 00	Flagpoles	\$ 6,540	0.05	SBBCC	
10 82 13	Exterior Grilles & Louvers	\$ 14,600	0.12	SBBCC	
<b>DIVISION 11 - EQUIPMENT</b>					
11 40 00	Foodservice Equipment	\$ 339,000	2.80	SBBCC	
11 66 23	Gymnasium Equipment	\$ 67,083	0.55	SBBCC	
11 68 10	Football Goal Posts & Pylons	\$ 16,885	0.14	SBBCC	
<b>DIVISION 12 - FURNISHINGS</b>					
12 32 16	Institutional, Laboratory Casework & Equipment	\$ 227,000	1.87	SBBCC	
12 48 13	Floor Mats & Frames	\$ 13,125	0.11	SBBCC	
12 66 00	Gymnasium Seating	\$ 127,500	1.05	SBBCC	
12 68 50	Auditorium Seating	\$ 135,713	1.12	SBBCC	
12 68 52	Stage Curtain, Rigging & Lighting Package	\$ 236,899	1.96	SBBCC	
<b>DIVISION 13 - SPECIAL CONSTRUCTION</b>					
<b>DIVISION 14 - CONVEYING SYSTEMS</b>					
14 24 00	Hydraulic Elevators	\$ 46,440	0.38	SBBCC	
<b>DIVISION 21 - FIRE SUPPRESSION</b>					
21 00 00	Fire Suppression Systems - Complete	\$ 201,945	1.67	SBBCC	
<b>DIVISION 22 - PLUMBING</b>					

<b>Central High School - Wise, VA - Office Site # 1</b>				<b>121,070</b>	<b>TOTAL COST</b>	
<b>PPEA Phase 2 Submission - 9.23.11</b>				<b>SF</b>	<b>21,512,350</b>	
<b>Base Bid</b>		Quantity/Factor	Quote	Cost per S. F.	Proposed Contractor	Comments
22 00 00	Plumbing Systems - Complete		\$ -	0.00	SBBCC	Included in HVAC
<b>DIVISION 25 - HVAC</b>						
23 00 00	HVAC Systems - Complete		\$ 3,087,285	25.50	SBBCC	
<b>DIVISION 25 - INTEGRATED AUTOMATION</b>						
<b>DIVISION 26 - ELECTRICAL</b>						
26 00 00	Electrical Systems - Complete		\$ 1,532,746	12.66	SBBCC	
26 00 10	Entrance Drive & Parking Lot Pole Lights		\$ 84,000	0.69	SBBCC	
26 10 15	Temporary Power & Lighting		\$ 52,500	0.43	SBBCC	
26 10 20	Start Up Power		\$ 39,000	0.32	SBBCC	
<b>DIVISION 27 COMMUNICATIONS</b>						
27 51 20	Cafeteria/Music Sound System		\$ -	0.00	WCPS	By Owner
27 51 21	In-Wall Sound System / FM Hearing Assist System		\$ -	0.00	WCPS	By Owner
27 51 23	Educational Intercommunications & Program Systems		\$ -	0.00	WCPS	By Owner
27 53 13	GPS Wireless Clock System		\$ -	0.00	WCPS	By Owner
<b>DIVISION 28 ELECTRONIC SAFETY AND SECURITY</b>						
28 05 00	Common Work Results for Electronic Safety & Security		\$ -	0.00	SBBCC	
28 05 13	Conductors & Cables for Safety Systems		\$ -	0.00	SBBCC	
28 31 11	Digital Addressable Fire Alarm System		\$ -	0.00	SBBCC	
28 50 00	Card Access / CCTV / Intrusion Detection Security System		\$ -	0.00	WCPS	By Owner
<b>DIVISION 31 EARTHWORK</b>						
31 10 05	Civil Engineering		\$ 183,000	1.51	Maxim	
31 10 10	Geotechnical Survey & Report		\$ 25,000	0.21	Maxim	
31 20 00	Erosion Control		\$ 25,280	0.21	SBBCC/Maxim	
31 20 01	Temporary Construction Entrance & Ring Road		\$ 101,824	0.84	SBBCC/Maxim	
31 20 02	Construction Entrance Wash Station		\$ 8,200	0.07	SBBCC/Maxim	
31 20 05	Cut/Fill - Rough Grade - Bldg. Pad & SWM Pond		\$ 120,405	0.99	SBBCC/Maxim	
31 20 10	Fine Grade - Bldg. Pad, Pond & Demolished Paving		\$ 68,797	0.57	SBBCC/Maxim	
31 20 12	Detention Basin, Swales, & Pond		\$ 79,200	0.65	SBBCC/Maxim	
31 31 16	Termite Control		\$ 7,690	0.06	SBBCC	
<b>DIVISION 32 EXTERIOR IMPROVEMENTS</b>						
32 12 10	Highway/Traffic Improvements - VDOT Requirements		\$ -	0.00	WCPS	By Owner
32 12 15	Asphalt Paving - 6/3/1.5 Drivelanes & Bus Loop		\$ 204,590	1.69	SBBCC/Maxim	
32 12 16	Asphalt Paving - 6/2/1.5 Vehicular Parking		\$ 232,368	1.92	SBBCC/Maxim	
32 12 20	Pavement Line Stripping & Painted Markings		\$ 7,024	0.06	SBBCC/Maxim	
32 12 25	Parking Area Signage		\$ 1,800	0.01	SBBCC/Maxim	
32 20 10	Concrete Entrance Aprons		\$ 56,400	0.47	SBBCC/Maxim	
32 31 05	Concrete Curb/Gutter - 18"		\$ 98,187	0.81	SBBCC/Maxim	
32 31 10	Concrete Paving - 4/4 Pedestrian Walkways		\$ 56,128	0.46	SBBCC/Maxim	
32 31 15	Concrete Paving - 8/6 Vehicular & MEP Pads		\$ 16,740	0.14	SBBCC/Maxim	
32 50 50	Chain Link Fence @ Detention Pond (780' x 6')		\$ 44,928	0.37	SBBCC/Maxim	
32 92 00	Seed/Fertilize/Mulch		\$ 22,289	0.18	SBBCC/Maxim	
32 93 00	Trees/Shrubs/Mulch		\$ 46,950	0.39	SBBCC/Maxim	
32 94 10	Irrigation @ Landscaped Areas		\$ 32,865	0.27	SBBCC/Maxim	
33 95 00	Site Furnishings - Benches, Trash Recept., Bike Racks		\$ 20,250	0.17	SBBCC/Maxim	



	<b>Central High School - Wise, VA - Office Site # 1</b>			<b>121,070</b>	<b>TOTAL COST</b>	
	<b>PPEA Phase 2 Submission - 9.23.11</b>			<b>SF</b>	<b>21,512,350</b>	
<b>Base Bid</b>		Quantity/Factor	Quote	Cost per S. F.	Proposed Contractor	Comments
<b>DIVISION 33 UTILITIES</b>						
33 41 01	12" HDPE Piping @ Building Perimeter		\$ 31,295	0.26	SBBCC/Maxim	
33 41 02	18" RCP Piping		\$ 129,511	1.07	SBBCC/Maxim	
33 41 03	24" RCP Piping		\$ 67,283	0.56	SBBCC/Maxim	
33 41 04	Drop Inlets		\$ 80,500	0.66	SBBCC/Maxim	
33 41 05	Catch Basins		\$ 7,800	0.06	SBBCC/Maxim	
33 41 06	Storm Manholes		\$ 17,500	0.14	SBBCC/Maxim	
33 41 10	End Structures		\$ 16,500	0.14	SBBCC/Maxim	
33 42 01	8" Water Line Main		\$ 47,500	0.39	SBBCC/Maxim	
33 42 02	8" Tap Sleeve & Fittings		\$ 5,440	0.04	SBBCC/Maxim	
33 42 03	8" Gate Valve w/ Box		\$ 3,227	0.03	SBBCC/Maxim	
33 42 04	8" Meter Vault		\$ 5,000	0.04	SBBCC/Maxim	
33 42 12	Fire Hydrants		\$ 7,000	0.06	SBBCC/Maxim	
33 42 15	FDC Connections		\$ 2,500	0.02	SBBCC/Maxim	
33 44 10	8" Sanitary Sewer Line		\$ 8,283	0.07	SBBCC/Maxim	
33 44 15	Sanitary Sewer Manholes		\$ 3,500	0.03	SBBCC/Maxim	
	Subtotal		\$ 19,797,420	163.52		
2.50%	Inflation Contingency		\$ 494,936	4.09		
5.00%	Overhead & Profit		\$ 989,871	8.18		
	Bond		\$ 195,758	1.62		
	Business License		\$ 34,365	0.28		
	Total Base Bid		\$ 21,512,350	177.69		
	<b>Building Construction Costs &amp; General Conditions</b>		<b>\$ 17,859,650</b>	<b>147.52</b>		
	<b>Site &amp; Building Demolition</b>		<b>\$ 499,946</b>	<b>4.13</b>		
	<b>Site Improvements</b>		<b>\$ 1,684,754</b>	<b>13.92</b>		
	<b>A/E Fees</b>		<b>\$ 1,468,000</b>	<b>12.13</b>		
	<b>TOTAL PROJECT PRICE</b>		<b>\$ 21,512,350</b>	<b>177.69</b>		

Central High School - Wise, VA - Office Site # 2				121,070	TOTAL COST	
PPEA Phase 2 Submission - 9.23.11				SF	22,148,600	
Base Bid		Quantity/Factor	Quote	Cost per S. F.	Proposed Contractor	Comments
<b>DIVISION 1 - GENERAL REQUIREMENTS</b>						
	General Conditions		\$ 1,398,658	11.55	SBBCC	
	Builders Risk		\$ 28,588	0.24	SBBCC	
	Building Permit		\$ -	0.00	Wise County	Not Required
	Legal Fees		\$ -	0.00	SBBCC	
	Preconstruction/Design Interest Expense		\$ -	0.00	SBBCC	
	Final Cleaning		\$ 54,482	0.45	SBBCC	
	Architectural/Structural/MEP Engineering		\$ 1,260,000	10.41	RRMM	
	Building Survey & Layout		\$ 90,000	0.74	SBBCC	
<b>DIVISION 2 EXISTING MATERIALS</b>						
02 15 20	Site Demolition		\$ 5,677	0.05	SBBCC	
02 20 50	Building Demolition		\$ 31,410	0.26	SBBCC	
<b>DIVISION 3 - CONCRETE</b>						
03 30 00	Building Cast-in-Place Concrete		\$ 819,644	6.77	SBBCC	
03 45 00	Architectural Precast Concrete - 5% Exterior Skin		\$ 80,188	0.66	SBBCC	
<b>DIVISION 4 - MASONRY</b>						
04 20 00	Exterior CMU Walls w/ VB, Insulation & Brick Veneer		\$ 958,238	7.91	SBBCC	
04 22 10	Interior CMU Partitions		\$ 865,845	7.15	SBBCC	
04 25 50	Masonry Rebar - Materials Only		\$ 78,030	0.64	SBBCC	
<b>DIVISION 5 - METALS</b>						
05 12 00	Structural Steel Framing - Full Steel Frame		\$ 1,875,374	15.49	SBBCC	
05 12 10	Steel Framing & Decking @ Canopies		\$ 65,614	0.54	SBBCC	
05 51 00	Metal Metals - Stairs, Lintels, Railings		\$ -	0.00	SBBCC	
<b>DIVISION 6 - WOODS, PLASTICS, AND COMPOSITES</b>						
06 10 00	Rough Carpentry - Materials		\$ 51,835	0.43	SBBCC	
06 10 05	Rough Carpentry - Installation		\$ 44,430	0.37	SBBCC	
06 20 23	Interior Finish Carpentry		\$ 7,152	0.06	SBBCC	
06 20 25	Laminate Tops @ Lockers		\$ 14,850	0.12	SBBCC	
<b>DIVISION 7 - THERMAL AND MOISTURE PROTECTION</b>						
07 13 26	Waterproofing @ Elevator Pit		\$ 1,820	0.02	SBBCC	
07 42 43	Composite Wall Panels - 10% Exterior Skin		\$ 120,197	0.99	SBBCC	
07 42 45	Aluminum Soffit @ Canopies		\$ 69,854	0.58	SBBCC	
07 52 16	TPO Membrane Roofing		\$ 851,547	7.03	SBBCC	
07 65 50	Exterior Skin Consultant		\$ 22,500	0.19	SBBCC	
07 84 46	Caulking & Sealants		\$ 21,793	0.18	SBBCC	
07 95 00	Expansion Control Joints		\$ 18,425	0.15	SBBCC	
<b>DIVISION 8 - OPENINGS</b>						
08 11 13	HM Door Frames, HM/SCW Doors & Door Hardware		\$ 213,400	1.76	SBBCC	
08 11 15	HM Borrowed Lites (48" x 48" x 72 EA)		\$ 34,560	0.29	SBBCC	
08 33 23	Non-Insulated Coiling Grilles - 14' x 5'		\$ 7,000	0.06	SBBCC	
08 33 25	Insulated OH Doors - 10' x 8'		\$ 7,800	0.06	SBBCC	
08 41 13	Aluminum Entrances & Windows - 25% Exterior Skin		\$ 776,030	6.41	SBBCC	

	<b>Central High School - Wise, VA - Office Site # 2</b>			<b>121,070</b>	<b>TOTAL COST</b>	
	<b>PPEA Phase 2 Submission - 9.23.11</b>			<b>SF</b>	<b>22,148,600</b>	
<b>Base Bid</b>		Quantity/Factor	Quote	Cost per S. F.	Proposed Contractor	Comments
<b>DIVISION 9 - FINISHES</b>						
09 22 10	GWB 6" 1-Hour Rated w/ Acoustic Insulation		\$ 75,322	0.62	SBBCC	
09 22 15	Suspended Plaster Ceilings @ Locker Rooms		\$ 66,623	0.55	SBBCC	
09 30 00	Ceramic Tile Floors @ Restrooms		\$ 30,186	0.25	SBBCC	
09 30 05	Ceramic Tile @ Restroom Wet Walls (60")		\$ 17,425	0.14	SBBCC	
09 30 10	Porcelain Tile @ Dining/Food Court & Event Lobbies		\$ 99,540	0.82	SBBCC	
09 30 15	Quarry Tile Floors @ Kitchen & Prep Areas		\$ 56,398	0.47	SBBCC	
09 51 13	Acoustical Panel Ceilings		\$ 172,235	1.42	SBBCC	
09 65 13	Carpet Tile, Resilient Tile, Base & Accessories		\$ 149,178	1.23	SBBCC	
09 65 66	Wood Flooring @ Gym & Stage		\$ 131,634	1.09	SBBCC	
09 65 70	Resilient Athletic Flooring @ Wrestling Room		\$ 28,132	0.23	SBBCC	
09 66 23	Acid-Resistant Resilient Flooring @ Science Labs		\$ 25,208	0.21	SBBCC	
09 66 45	Epoxy Flooring @ Locker Rooms		\$ 61,688	0.51	SBBCC	
09 84 13	Acoustic Clouds @ Auditorium, Dining & Music Center		\$ 36,330	0.30	SBBCC	
09 91 00	Painting		\$ 98,067	0.81	SBBCC	
<b>DIVISION 10 - SPECIALTIES</b>						
10 11 00	Visual Display Surfaces		\$ 41,607	0.34	SBBCC	
10 12 00	Display Cases		\$ 17,280	0.14	SBBCC	
10 14 00	Signage Per Code Only - No Exterior or Specialty Signs		\$ 38,742	0.32	SBBCC	
10 21 13	Solid Color Reinforced Composite Toilet Compartments		\$ 27,000	0.22	SBBCC	
10 21 15	Shower Doors		\$ 2,800	0.02	SBBCC	
10 28 00	Toilet & Bath Accessories		\$ 18,900	0.16	SBBCC	
10 28 10	Curtaintracks & Curtains @ Clinic		\$ 1,300	0.01	SBBCC	
10 44 13	Fire Extinguisher Cabinets & Extinguishers		\$ 10,500	0.09	SBBCC	
10 51 00	Scholastic Lockers - 3'0" Height		\$ 83,160	0.69	SBBCC	
10 51 13	Athletic Lockers - Double-Stacked Units		\$ 49,400	0.41	SBBCC	
10 75 00	Flagpoles		\$ 6,540	0.05	SBBCC	
10 82 13	Exterior Grilles & Louvers		\$ 14,600	0.12	SBBCC	
<b>DIVISION 11 - EQUIPMENT</b>						
11 40 00	Foodservice Equipment		\$ 339,000	2.80	SBBCC	
11 66 23	Gymnasium Equipment		\$ 67,083	0.55	SBBCC	
<b>DIVISION 12 - FURNISHINGS</b>						
12 32 16	Institutional, Laboratory Casework & Equipment		\$ 227,000	1.87	SBBCC	
12 48 13	Floor Mats & Frames		\$ 13,125	0.11	SBBCC	
12 66 00	Gymnasium Seating		\$ 127,500	1.05	SBBCC	
12 68 50	Auditorium Seating		\$ 135,713	1.12	SBBCC	
12 68 52	Stage Curtain, Rigging & Lighting Package		\$ 236,901	1.96	SBBCC	
<b>DIVISION 13 - SPECIAL CONSTRUCTION</b>						
<b>DIVISION 14 - CONVEYING SYSTEMS</b>						
14 24 00	Hydraulic Elevators		\$ 46,440	0.38	SBBCC	
<b>DIVISION 21 - FIRE SUPPRESSION</b>						
21 00 00	Fire Suppression Systems - Complete		\$ 201,945	1.67	SBBCC	

	Central High School - Wise, VA - Office Site # 2			121,070	TOTAL COST	
	PPEA Phase 2 Submission - 9.23.11			SF	22,148,600	
Base Bid		Quantity/Factor	Quote	Cost per S. F.	Proposed Contractor	Comments
DIVISION 22 - PLUMBING						
22 00 00	Plumbing Systems - Complete		\$ -	0.00	SBBCC	Included in HVAC
DIVISION 25 - HVAC						
23 00 00	HVAC Systems - Complete		\$ 3,087,285	25.50	SBBCC	
DIVISION 25 - INTEGRATED AUTOMATION						
DIVISION 26 - ELECTRICAL						
26 00 00	Electrical Systems - Complete		\$ 1,532,746	12.66	SBBCC	
26 00 10	Entrance Drive & Parking Lot Pole Lights		\$ 84,000	0.69	SBBCC	
26 10 15	Temporary Power & Lighting		\$ 52,500	0.43	SBBCC	
26 10 20	Start Up Power		\$ 39,000	0.32	SBBCC	
DIVISION 27 COMMUNICATIONS						
27 51 20	Cafeteria/Music Sound System		\$ -	0.00	WCPS	
27 51 21	In-Wall Sound System / FM Hearing Assist System		\$ -	0.00	WCPS	
27 51 23	Educational Intercommunications & Program Systems		\$ -	0.00	WCPS	
27 53 13	GPS Wireless Clock System		\$ -	0.00	WCPS	
DIVISION 28 ELECTRONIC SAFETY AND SECURITY						
28 05 00	Common Work Results for Electronic Safety & Security		\$ -	0.00	SBBCC	
28 05 13	Conductors & Cables for Safety Systems		\$ -	0.00	SBBCC	
28 31 11	Digital Addressable Fire Alarm System		\$ -	0.00	SBBCC	
28 50 00	Card Access / CCTV / Intrusion Detection Security System		\$ -	0.00	WCPS	
DIVISION 31 EARTHWORK						
31 10 05	Civil Engineering		\$ 227,000	1.87	Maxim	
31 10 10	Geotechnical Survey & Report		\$ 25,000	0.21	Maxim	
31 20 00	Erosion Control		\$ 32,640	0.27	SBBCC/Maxim	
31 20 01	Temporary Construction Entrance & Ring Road		\$ 108,302	0.89	SBBCC/Maxim	
31 20 02	Construction Entrance Wash Station		\$ 8,200	0.07	SBBCC/Maxim	
31 20 05	Cut/Fill - Rough Grade - Bldg. Pad & SWM Pond		\$ 777,635	6.42	SBBCC/Maxim	
31 20 10	Fine Grade - Bldg. Pad, Pond & Demolished Paving		\$ 38,352	0.32	SBBCC/Maxim	
31 20 12	Detention Basin, Swales, & Pond		\$ 79,200	0.65	SBBCC/Maxim	
31 31 16	Termite Control		\$ 7,690	0.06	SBBCC/Maxim	
DIVISION 32 EXTERIOR IMPROVEMENTS						
32 12 10	Highway/Traffic Improvements - VDOT Requirements		\$ -	0.00	WCPS	
32 12 15	Asphalt Paving - 6/3/1.5 Drivelanes & Bus Loop		\$ 321,732	2.66	SBBCC/Maxim	
32 12 16	Asphalt Paving - 6/2/1.5 Vehicular Parking		\$ 337,728	2.79	SBBCC/Maxim	
32 12 20	Pavement Line Stripping & Painted Markings		\$ 7,024	0.06	SBBCC/Maxim	
32 12 25	Parking Area Signage		\$ 1,800	0.01	SBBCC/Maxim	
32 20 10	Concrete Entrance Aprons		\$ 112,800	0.93	SBBCC/Maxim	
32 31 05	Concrete Curb/Gutter - 18"		\$ 95,496	0.79	SBBCC/Maxim	
32 31 10	Concrete Paving - 4/4 Pedestrian Walkways		\$ 75,712	0.63	SBBCC/Maxim	
32 31 15	Concrete Paving - 8/6 Vehicular & MEP Pads		\$ 7,533	0.06	SBBCC/Maxim	
32 50 50	Chain Link Fence @ Detention Pond (780' x 6')		\$ 44,928	0.37	SBBCC/Maxim	



	Central High School - Wise, VA - Office Site # 2			121,070	TOTAL COST	
	PPEA Phase 2 Submission - 9.23.11			SF	22,148,600	
				Cost per		
Base Bid		Quantity/Factor	Quote	S. F.	Proposed Contractor	Comments
32 92 00	Seed/Fertilize/Mulch		\$ 10,347	0.09	SBBCC/Maxim	
32 93 00	Trees/Shrubs/Mulch		\$ 40,610	0.34	SBBCC/Maxim	
32 94 10	Irrigation @ Landscaped Areas		\$ 28,427	0.23	SBBCC/Maxim	
33 95 00	Site Furnishings - Benches, Trash Recepts., Bike Racks		\$ 20,250	0.17	SBBCC/Maxim	
DIVISION 33 UTILITIES						
33 41 01	12" HDPE Piping @ Building Perimeter		\$ 31,295	0.26	SBBCC/Maxim	
33 41 02	18" RCP Piping		\$ 173,492	1.43	SBBCC/Maxim	
33 41 03	24" RCP Piping		\$ 68,699	0.57	SBBCC/Maxim	
33 41 04	Drop Inlets		\$ 98,000	0.81	SBBCC/Maxim	
33 41 05	Catch Basins		\$ 5,850	0.05	SBBCC/Maxim	
33 41 06	Storm Manholes		\$ 14,000	0.12	SBBCC/Maxim	
33 41 10	End Structures		\$ 16,500	0.14	SBBCC/Maxim	
33 42 01	8" Water Line Main		\$ 76,000	0.63	SBBCC/Maxim	
33 42 02	8" Tap Sleeve & Fittings		\$ 5,440	0.04	SBBCC/Maxim	
33 42 03	8" Gate Valve w/ Box		\$ 3,227	0.03	SBBCC/Maxim	
33 42 04	8" Meter Vault		\$ 10,283	0.08	SBBCC/Maxim	
33 42 12	Fire Hydrants		\$ 7,000	0.06	SBBCC/Maxim	
33 42 15	FDC Connections		\$ 2,500	0.02	SBBCC/Maxim	
33 44 10	8" Sanitary Sewer Line		\$ 27,108	0.22	SBBCC/Maxim	
33 44 15	Sanitary Sewer Manholes		\$ 10,500	0.09	SBBCC/Maxim	
	Subtotal		\$ 20,383,274	168.36		
2.50%	Inflation Contingency		\$ 509,582	4.21		
5.00%	Overhead & Profit		\$ 1,019,164	8.42		
	Bond		\$ 201,200	1.66		
	Business License		\$ 35,381	0.29		
	Total Base Bid		\$ 22,148,600	182.94		
	Building Construction Costs & General Conditions		\$ 17,893,213	147.79		
	Site & Building Demolition		\$ 37,087	0.31		
	Site Improvements		\$ 2,706,300	22.35		
	A/E Fees		\$ 1,512,000	12.49		
	TOTAL PROJECT PRICE		\$ 22,148,600	182.94		

	<b>Central High School - Wise, VA - JJ Kelly Site</b>			<b>121,070</b>	<b>TOTAL COST</b>	
	<b>PPEA Phase 2 Submission - 9.23.11</b>			<b>SF</b>	<b>22,708,875</b>	
<b>Base Bid</b>		Quantity	Quote	Cost per S. F.	Proposed Contractor	COMMENTS
<b>DIVISION 1 - GENERAL REQUIREMENTS</b>						
	General Conditions		\$ 1,398,658	11.55	SBBCC	
	Builders Risk		\$ 28,653	0.24	SBBCC	
	Building Permit		\$ -	0.00	Wise County	Not Required
	Legal Fees		\$ -	0.00	SBBCC	
	Preconstruction/Design Interest Expense		\$ -	0.00	SBBCC	
	Final Cleaning		\$ 54,482	0.45	SBBCC	
	Architectural/Structural/MEP Engineering		\$ 1,260,000	10.41	RRMM	
	Building Survey & Layout		\$ 90,000	0.74	SBBCC	
<b>DIVISION 2 EXISTING MATERIALS</b>						
02 15 20	Site Demolition		\$ 167,934	1.39	SBBCC	
02 20 50	Building Demolition		\$ 400,000	3.30	SBBCC	
02 20 60	Hazardous Materials Report & Abatement		\$ -	0.00	WCPS	By Owner
<b>DIVISION 3 - CONCRETE</b>						
03 30 00	Building Cast-in-Place Concrete		\$ 819,644	6.77	SBBCC	
03 45 00	Architectural Precast Concrete - 5% Exterior Skin		\$ 80,188	0.66	SBBCC	
<b>DIVISION 4 - MASONRY</b>						
04 20 00	Exterior CMU Walls w/ VB, Insulation & Brick Veneer		\$ 958,238	7.91	SBBCC	
04 22 10	Interior CMU Partitions		\$ 865,845	7.15	SBBCC	
04 25 50	Masonry Rebar - Materials Only		\$ 78,030	0.64	SBBCC	
<b>DIVISION 5 - METALS</b>						
05 12 00	Structural Steel Framing - Full Steel Frame		\$ 1,875,374	15.49	SBBCC	
05 12 05	Steel Framing & Decking @ Canopies		\$ 65,614	0.54	SBBCC	
05 51 00	Metal Metals - Stairs, Lintels, Railings		\$ -	0.00	SBBCC	
<b>DIVISION 6 - WOODS, PLASTICS, AND COMPOSITES</b>						
06 10 00	Rough Carpentry - Materials		\$ 51,835	0.43	SBBCC	
06 10 05	Rough Carpentry - Installation		\$ 44,430	0.37	SBBCC	
06 20 23	Interior Finish Carpentry		\$ 7,152	0.06	SBBCC	
06 20 25	Laminate Tops @ Lockers		\$ 14,850	0.12	SBBCC	
<b>DIVISION 7 - THERMAL AND MOISTURE PROTECTION</b>						
07 13 26	Waterproofing @ Elevator Pit		\$ 1,820	0.02	SBBCC	
07 42 43	Composite Wall Panels - 10% Exterior Skin		\$ 120,197	0.99	SBBCC	
07 50 10	Aluminum Soffit @ Canopies		\$ 69,854	0.58	SBBCC	
07 52 16	TPO Membrane Roofing		\$ 851,547	7.03	SBBCC	
07 65 50	Exterior Skin Consultant		\$ 22,500	0.19	SBBCC	
07 84 46	Caulking & Sealants		\$ 21,793	0.18	SBBCC	
07 95 00	Expansion Control Joints		\$ 18,425	0.15	SBBCC	
<b>DIVISION 8 - OPENINGS</b>						
08 11 13	HM Frames, HM/SCW Doors & Door Hardware		\$ 213,400	1.76	SBBCC	
08 11 15	HM Borrowed Lites (48" x 48" x 72 ea)		\$ 34,560	0.29	SBBCC	
08 33 23	Non-Insulated Coiling Grilles - 14' x 5'		\$ 7,000	0.06	SBBCC	
08 33 23	Insulated OH Doors - 10' x 8'		\$ 7,800	0.06	SBBCC	
08 41 13	Aluminum Entrances & Windows - 25% Exterior Skin		\$ 776,030	6.41	SBBCC	

	<b>Central High School - Wise, VA - JJ Kelly Site</b>			<b>121,070</b>	<b>TOTAL COST</b>	
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<b>Base Bid</b>		Quantity	Quote	Cost per S. F.	Proposed Contractor	COMMENTS
<b>DIVISION 9 - FINISHES</b>						
09 22 10	GWB 6" 1-Hour Rated w/ Acoustic Insulation		\$ 75,322	0.62	SBBCC	
09 22 15	Suspended Plaster Ceilings @ Locker Rooms		\$ 66,623	0.55	SBBCC	
09 30 00	Ceramic Tile Floors @ Restrooms		\$ 30,186	0.25	SBBCC	
09 30 05	Ceramic Tile @ Restroom Wet Walls (60")		\$ 17,425	0.14	SBBCC	
09 30 10	Porcelain Tile @ Dining/Food Court & Event Lobbies		\$ 99,540	0.82	SBBCC	
09 30 15	Quarry Tile Floors @ Kitchen & Prep Areas		\$ 56,398	0.47	SBBCC	
09 51 13	Acoustical Panel Ceilings		\$ 172,235	1.42	SBBCC	
09 65 13	Carpet Tile, Resilient Tile, Base & Accessories		\$ 149,178	1.23	SBBCC	
09 65 66	Wood Flooring @ Gym & Stage		\$ 131,634	1.09	SBBCC	
09 65 70	Resilient Athletic Flooring @ Wrestling Room		\$ 28,132	0.23	SBBCC	
09 66 23	Acid-Resistant Resilient Flooring @ Science Labs		\$ 25,208	0.21	SBBCC	
09 66 45	Epoxy Flooring @ Locker Rooms		\$ 61,688	0.51	SBBCC	
09 84 13	Acoustic Clouds @ Auditorium, Dining & Music Center		\$ 36,330	0.30	SBBCC	
09 91 00	Painting		\$ 98,067	0.81	SBBCC	
<b>DIVISION 10 - SPECIALTIES</b>						
10 11 00	Visual Display Surfaces		\$ 41,607	0.34	SBBCC	
10 12 00	Display Cases		\$ 17,280	0.14	SBBCC	
10 14 00	Signage Per Code Only - No Exterior or Specialty Signs		\$ 38,742	0.32	SBBCC	
10 21 13	Solid Color Reinforced Composite Toilet Compartments		\$ 27,000	0.22	SBBCC	
10 21 15	Shower Doors		\$ 2,800	0.02	SBBCC	
10 28 00	Toilet & Bath Accessories		\$ 18,900	0.16	SBBCC	
10 28 10	Curtaintracks & Curtains @ Clinic		\$ 1,300	0.01	SBBCC	
10 44 13	Fire Protection Cabinets & Extinguishers		\$ 10,500	0.09	SBBCC	
10 51 00	Scholastic Lockers - 3'0" Height		\$ 83,160	0.69	SBBCC	
10 51 13	Athletic Lockers - Double-Stacked Units		\$ 49,400	0.41	SBBCC	
10 75 00	Flagpoles		\$ 6,540	0.05	SBBCC	
10 82 13	Exterior Grilles & Louvers		\$ 14,600	0.12	SBBCC	
<b>DIVISION 11 - EQUIPMENT</b>						
11 40 00	Foodservice Equipment		\$ 339,000	2.80	SBBCC	
11 66 23	Gymnasium Equipment		\$ 67,083	0.55	SBBCC	
<b>DIVISION 12 - FURNISHINGS</b>						
12 32 16	Institutional, Laboratory Casework & Equipment		\$ 227,000	1.87	SBBCC	
12 48 13	Floor Mats & Frames		\$ 13,125	0.11	SBBCC	
12 66 00	Gymnasium Seating		\$ 127,500	1.05	SBBCC	
12 68 50	Auditorium Seating		\$ 135,713	1.12	SBBCC	
12 68 52	Stage Curtain, Rigging & Lighting Package		\$ 236,901	1.96	SBBCC	
<b>DIVISION 13 - SPECIAL CONSTRUCTION</b>						
<b>DIVISION 14 - CONVEYING SYSTEMS</b>						
14 24 00	Hydraulic Elevators		\$ 46,440	0.38	SBBCC	
<b>DIVISION 21 - FIRE SUPPRESSION</b>						
21 00 00	Fire Suppression Systems - Complete		\$ 201,945	1.67	SBBCC	

	<b>Central High School - Wise, VA - JJ Kelly Site</b>			<b>121,070</b>	<b>TOTAL COST</b>	
	<b>PPEA Phase 2 Submission - 9.23.11</b>			<b>SF</b>	<b>22,708,875</b>	
<b>Base Bid</b>		Quantity	Quote	Cost per S. F.	Proposed Contractor	COMMENTS
<b>DIVISION 22 - PLUMBING</b>						
22 00 00	Plumbing Systems - Complete		\$ -	0.00	SBBCC	Included in HVAC
<b>DIVISION 25 - HVAC</b>						
23 00 00	HVAC Systems - Complete		\$ 3,087,285	25.50	SBBCC	
<b>DIVISION 25 - INTEGRATED AUTOMATION</b>						
<b>DIVISION 26 - ELECTRICAL</b>						
26 00 00	Electrical Systems - Complete		\$ 1,532,746	12.66	SBBCC	
26 00 10	Entrance Drive & Parking Lot Pole Lights		\$ 84,000	0.69	SBBCC	
26 10 15	Temporary Power & Lighting		\$ 52,500	0.43	SBBCC	
26 10 20	Start Up Power		\$ 39,000	0.32	SBBCC	
<b>DIVISION 27 COMMUNICATIONS</b>						
27 51 20	Cafeteria/Music Sound System		\$ -	0.00	WCPS	By Owner
27 51 21	In-Wall Sound System / FM Hearing Assist System		\$ -	0.00	WCPS	By Owner
27 51 23	Educational Intercommunications & Program Systems		\$ -	0.00	WCPS	By Owner
27 53 13	GPS Wireless Clock System		\$ -	0.00	WCPS	By Owner
<b>DIVISION 28 ELECTRONIC SAFETY AND SECURITY</b>						
28 05 00	Common Work Results for Electronic Safety & Security		\$ -	0.00	SBBCC	
28 05 13	Conductors & Cables for Safety Systems		\$ -	0.00	SBBCC	
28 31 11	Digital Addressable Fire Alarm System		\$ -	0.00	SBBCC	
28 50 00	Card Access / CCTV / Intrusion Detection Security System		\$ -	0.00	WCPS	By Owner
<b>DIVISION 31 EARTHWORK</b>						
31 10 05	Civil Engineering		\$ 205,000	1.69	Maxim	
31 10 10	Geotechnical Survey & Report		\$ 25,000	0.21	Maxim	
31 20 00	Erosion Control		\$ 39,680	0.33	SBBCC/Maxim	
31 20 01	Temporary Construction Entrance & Ring Road		\$ 99,097	0.82	SBBCC/Maxim	
31 20 02	Construction Entrance Wash Station		\$ 8,200	0.07	SBBCC/Maxim	
31 20 04	Clear & Grub - Trees @ SE Corner		\$ 37,200	0.31	SBBCC/Maxim	
31 20 05	Cut/Fill - Rough Grade - Bldg. Pad & SWM Pond		\$ 496,950	4.10	SBBCC/Maxim	
31 20 10	Fine Grade - Bldg. Pad & Pond Area		\$ 51,007	0.42	SBBCC/Maxim	
31 20 12	Detention Basin, Swales, & Pond		\$ 79,200	0.65	SBBCC/Maxim	
31 31 16	Termite Control		\$ 7,690	0.06	SBBCC/Maxim	
<b>DIVISION 32 EXTERIOR IMPROVEMENTS</b>						
32 12 10	Highway/Traffic Improvements - VDOT Requirements		\$ -	0.00	WCPS	By Owner
32 12 15	Asphalt Paving - 6/3/1.5 Drivelanes & Bus Loop		\$ 302,480	2.50	SBBCC/Maxim	
32 12 16	Asphalt Paving - 6/2/1.5 Vehicular Parking		\$ 268,952	2.22	SBBCC/Maxim	
32 12 20	Pavement Line Stripping & Painted Markings		\$ 7,024	0.06	SBBCC/Maxim	
32 12 25	Parking Area Signage		\$ 1,800	0.01	SBBCC/Maxim	
32 20 05	Precast Concrete Bridges		\$ 270,240	2.23	SBBCC/Maxim	
32 20 10	Concrete Entrance Aprons		\$ 56,400	0.47	SBBCC/Maxim	
32 31 05	Concrete Curb/Gutter - 18"		\$ 77,832	0.64	SBBCC/Maxim	
32 31 10	Concrete Paving - 4/4 Pedestrian Walkways		\$ 55,712	0.46	SBBCC/Maxim	
32 31 15	Concrete Paving - 8/6 Vehicular & MEP Pads		\$ 7,533	0.06	SBBCC/Maxim	
32 50 50	Chain Link Fence @ Detention Pond (780' x 6')		\$ 44,928	0.37	SBBCC/Maxim	
32 92 00	Seed/Fertilize/Mulch		\$ 23,615	0.20	SBBCC/Maxim	



	<b>Central High School - Wise, VA - JJ Kelly Site</b>			<b>121,070</b>	<b>TOTAL COST</b>	
	<b>PPEA Phase 2 Submission - 9.23.11</b>			<b>SF</b>	<b>22,708,875</b>	
<b>Base Bid</b>		Quantity	Quote	Cost per S. F.	Proposed Contractor	COMMENTS
32 93 00	Trees/Shrubs/Mulch		\$ 75,935	0.63	SBBCC/Maxim	
32 94 10	Irrigation @ Landscaped Areas		\$ 53,154	0.44	SBBCC/Maxim	
33 95 00	Site Furnishings - Benches, Trash Recept., Bike Racks		\$ 20,250	0.17	SBBCC/Maxim	
<b>DIVISION 33 UTILITIES</b>						
33 41 01	12" HDPE Piping @ Building Perimeter		\$ 31,295	0.26	SBBCC/Maxim	
33 41 02	18" RCP Piping		\$ 162,975	1.35	SBBCC/Maxim	
33 41 03	24" RCP Piping		\$ 50,757	0.42	SBBCC/Maxim	
33 41 04	Drop Inlets		\$ 84,000	0.69	SBBCC/Maxim	
33 41 05	Catch Basins		\$ 7,800	0.06	SBBCC/Maxim	
33 41 06	Storm Manholes		\$ 17,500	0.14	SBBCC/Maxim	
33 41 10	End Structures		\$ 16,500	0.14	SBBCC/Maxim	
33 42 01	12" Domestic Water Main		\$ 218,924	1.81	SBBCC/Maxim	
33 42 02	12" Tap Sleeve & Fittings		\$ 7,500	0.06	SBBCC/Maxim	
33 42 03	12" Gate Valve w/ Box		\$ 6,600	0.05	SBBCC/Maxim	
33 42 04	12" Meter Vault		\$ 6,300	0.05	SBBCC/Maxim	
33 42 12	Fire Hydrants		\$ 7,000	0.06	SBBCC/Maxim	
33 42 15	FDC Connections		\$ 2,500	0.02	SBBCC/Maxim	
33 44 10	8" Sanitary Sewer Line		\$ 5,254	0.04	SBBCC/Maxim	
33 44 15	Sanitary Sewer Manholes		\$ 3,500	0.03	SBBCC/Maxim	
	Subtotal		\$ 20,899,170	172.62		
2.50%	Inflation Contingency		\$ 522,479	4.32		
5.00%	Overhead & Profit		\$ 1,044,959	8.63		
	Bond		\$ 205,991	1.70		
	Business License		\$ 36,276	0.30		
	Total Base Bid		\$ 22,708,875	187.57		
	<b>Building Construction Costs &amp; General Conditions</b>		<b>\$ 17,937,657</b>	<b>148.16</b>		
	<b>Site &amp; Building Demolition</b>		<b>\$ 567,934</b>	<b>4.69</b>		
	<b>Site Improvements</b>		<b>\$ 2,713,284</b>	<b>22.41</b>		
	<b>A/E Fees</b>		<b>\$ 1,490,000</b>	<b>12.31</b>		
	<b>TOTAL PROJECT PRICE</b>		<b>\$ 22,708,875</b>	<b>187.57</b>		

The following comments are in direct response to Items # 1 through # 15 requested by M.B. Kahn in the “Initial PPEA Proposal Review” document dated 8.31.11:

1. *The estimated cost presented in your Conceptual proposal submission resulted in a project budget overage of approximately 8%. Please reduce your project cost through additional design efficiencies and/or bid alternates. Proposed reductions may reduce building size, but must not impact basic instruction.*

**Our current pricing incorporates an extremely efficient building design. This, combined with the additional time granted to secure more competitive pricing and acquire more in-depth site information, as well as alternates presented for review has allowed us to offer the Owner combination pricing that far exceeds the stated goal.**

2. *2<sup>nd</sup> Avenue is the only access to the Powell Valley Primary & Middle Schools behind PVHS. Ensure that the new entrance & drive layout has a minimum impact to existing traffic flow.*

**Please see proposed Union High School site plan.**

3. *A field for PE should be available to the HS during construction.*

**Our team remains ready to work in cooperation with WCPS to meet their needs throughout this process.**

4. *VDOT Improvements will be by others.*

**Our current pricing reflects this.**

5. *Provide a description of proposed interior finishes.*

**Please see Section 13.a.**

6. *Identify spaces to be used for special education classrooms.*

**Per the Program Space Summary issued with the original RFP, “All Special Ed are mainstreamed”. Our design offers a full array of classroom and extended learning areas that can be utilized as best determined by WCPS.**

7. *Does the proposed construction schedule include predetermined allowable weather days for this regional location? Or, what weather consideration was given to the overall schedule?*

**We would intend to utilize all of our proven Best Measures to assure a timely completion of the proposed work. When WCPS has made a final selection of the location for Central High School and has provided information related to any delays required for property procurement or zoning issues, the schedule will be finalized.**

8. *Provide conduit-only for communication, data and security systems.*

**This limitation is acknowledged and reflected in our current pricing.**

9. *Owner is to provide a third party for IBC testing/inspections. This is acknowledged and reflected in our current pricing.*

*Identify what athletic fields will be available to the HS during construction? If there will be scheduled interruption of any athletic fields, please provide an outline as to your plans and a suggestive plan of action for this interruption.*

**Please see ‘Site Narratives’ in section 13.a.**

10. *The Owner’s Furnishings, Fixtures & Equipment (FF&E) budget is intended for loose furnishings/furniture only (desks, chairs, etc.). Any proposed variation from this must be clearly identified.*

**Our proposed pricing takes no exception to this statement.**

11. *The Owner would like to review and have the ability to consider a four (4) pipe HVAC System. If your project scope already includes this particular system, please indicate so. If not, as an alternate cost.*

**As stated in our August 11<sup>th</sup> proposal and again in the current proposal, our base bid includes a 4-pipe hydroponic system. We have now included an alternate deduct to substitute a high-efficiency RTU system.**

12. *If your proposal requires the replacement of any Athletic Facilities, please provide a replacement outline and cost to add back for each.*

**Our August 11 proposal provided a full-range of all requested sports facility alternates. No values referenced in our initial proposal have changed at this time.**

13. *Your Conceptual proposal did not include any type of building plan or proposed layout. Please include in the Detailed Proposal.*

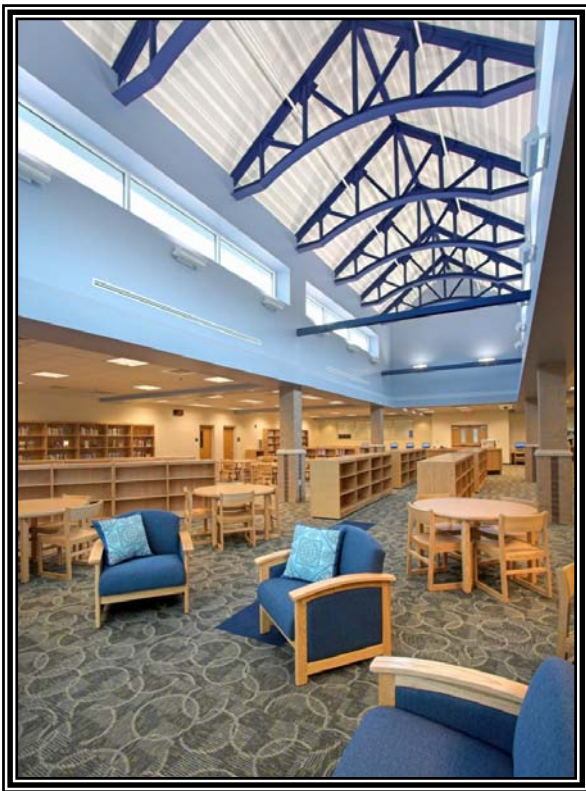
**Please see section 13.b.**

14. *Your proposal seems to include a lot of references to LEED items in the building description. Is LEED certification included in the proposed cost?*

**No.**

15. *Proposer should include whatever contingencies for themselves that they deem appropriate to cover design and construction issues. The Owner will carry their own contingency.*

**Please see section 13.c**



*New Kent High School  
New Kent, Virginia*



*Kellam High School  
Virginia Beach, Virginia*

*The Renaissance Academy  
Virginia Beach, Virginia*



*Grassfield High School  
Chesapeake, Virginia*

*Cumberland Combined Middle/High School  
Cumberland County, Virginia*

