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Construction Management
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Teachers Education and Technology Center at Salisbury University
Salisbury, MD
10/5/06

TECHNICAL ASSIGNMENT 1

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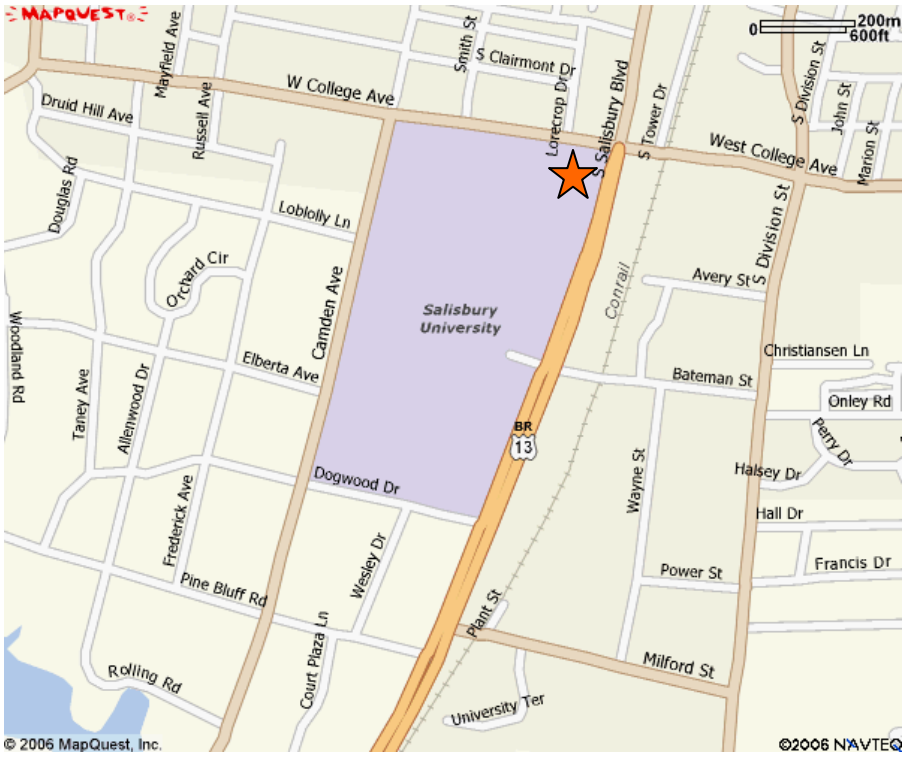
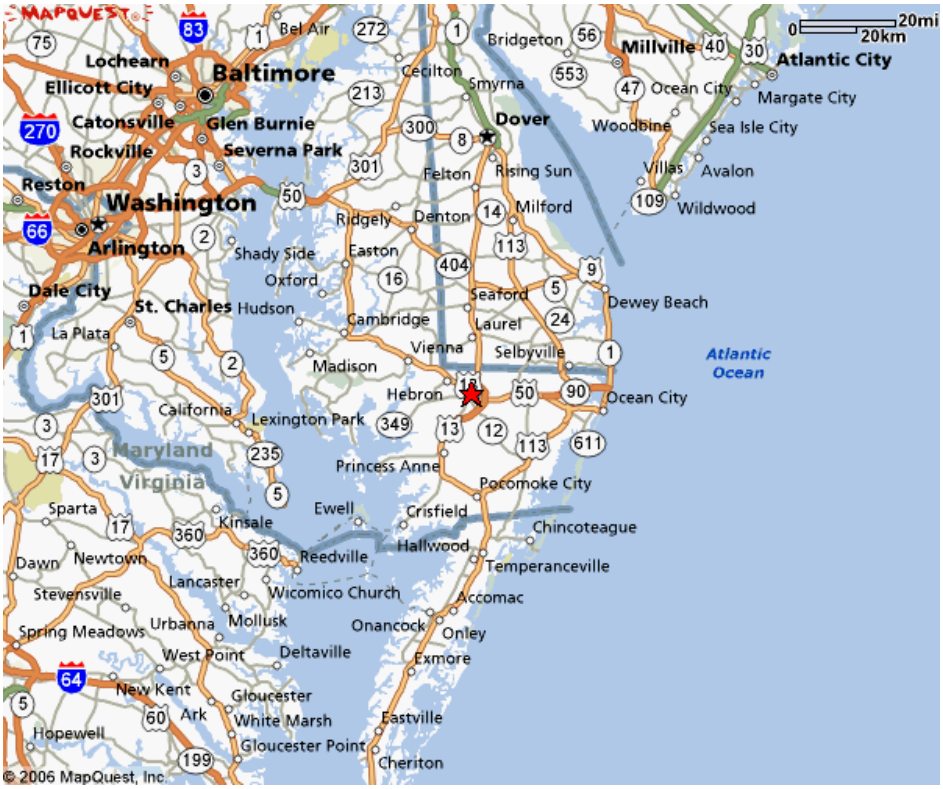
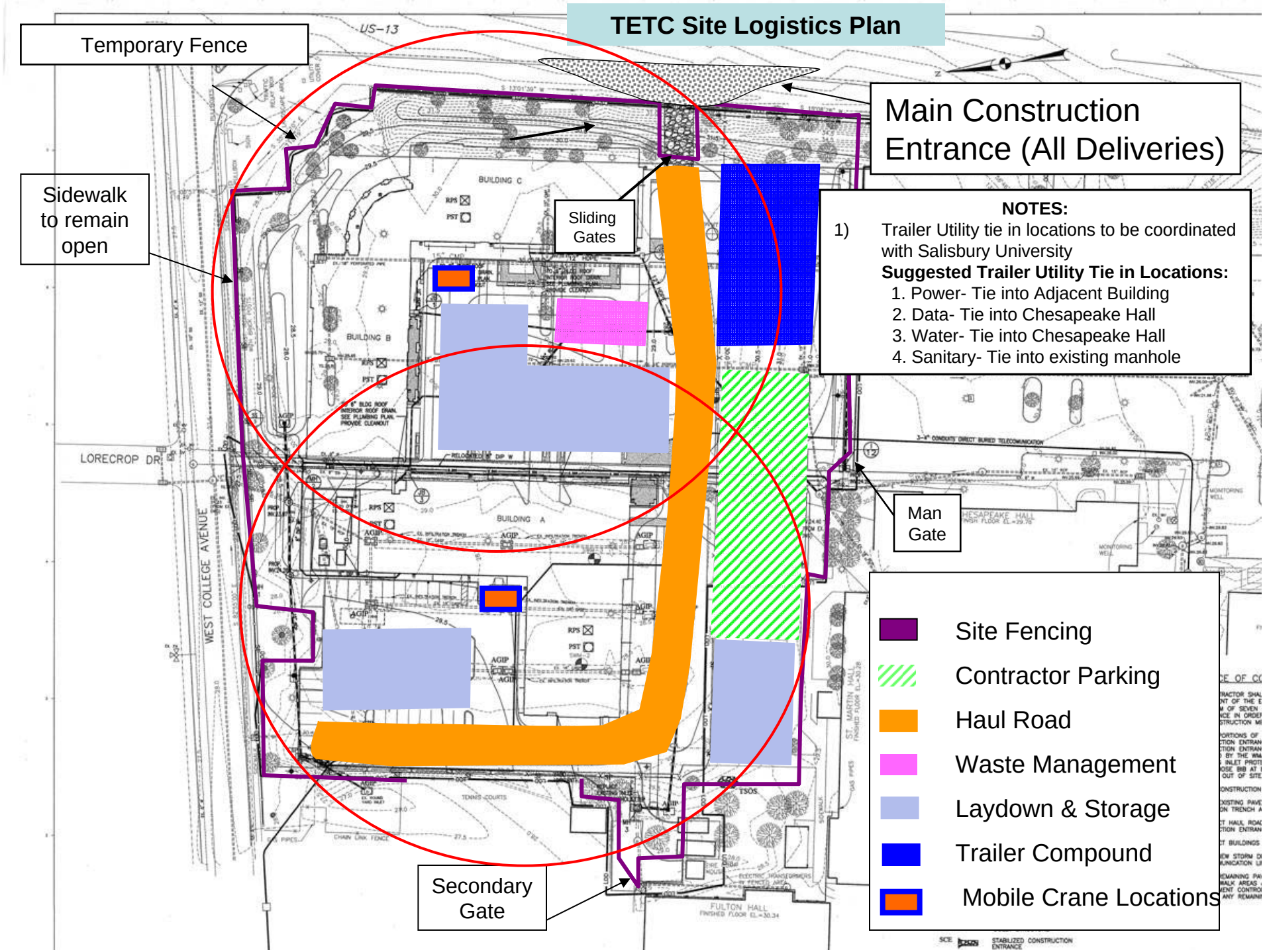
Construction Project Management

Project Location





TETC Site Logistics Plan



NOTES:

1) Trailer Utility tie in locations to be coordinated with Salisbury University

Suggested Trailer Utility Tie in Locations:

1. Power- Tie into Adjacent Building
2. Data- Tie into Chesapeake Hall
3. Water- Tie into Chesapeake Hall
4. Sanitary- Tie into existing manhole

Local Conditions

The Teachers Education and Technology Center is located on the eastern shore of southern Maryland on Salisbury University's campus. The building structure is steel with a brick façade to match the brick of the buildings throughout the University of Maryland School System. Two mobile cranes will be utilized to set structural steel starting from the back most corner of the site working towards the intersection of West College Ave. and U.S. 13.

The project site is not constricted by surrounding buildings and there is ample space for lay down areas, parking, and the trailer compound (Refer to Site Plan on Page 4). The site also has necessary dumpster space for recycling and waste management. Holder Construction will be recycling concrete, steel, drywall, and paper for the project. The owner was considering a LEED certification, but financial constraints did not allow it. The specifications associated with LEED certification that do not increase the project cost are still being used. Additional dumpsters for each type of material being recycled will be placed on site. Waste and recycled material will be hauled off site by the same waste management company.

The Test Borings found that the surface soil to be Silty Sand Fill with layers of various grades of sands and clayey sands below. In general the subsurface layers were found to be alternating layers of poorly graded and well graded sands. The sandy soils of the project site require the use of auger cast piles for the foundation system. Driven piles were considered but the noise was not acceptable with dormitories in the area. During Test Borings groundwater was encountered. The water table should be assumed to be at or below the caved depths for borings where groundwater was not found. The water table was estimated to be between 10 to 14 feet below the surface and the auger cast piles are estimated to be drilled to approximately 20 feet

below grade. Therefore some type of site dewatering will be required. The Auger Cast Piles are specified to carry of a maximum load of 55 tons.

Client Information

The owner of this project is the University of Maryland. The University of Maryland Architecture, Engineering, and Construction Department (UMAEC), a subdivision of the owner, directly works to manage the design and construction teams. The State of Maryland has determined that the population growth in the area is going to require a large number of teachers in Elementary and Secondary Education over the next few years. The Teachers Education and Technology Center will be used to instruct college students how to teach Elementary and Secondary students and help meet the demand for teachers. The University of Maryland looked at placing the building on several different campuses within their school system, but Salisbury ended up being the best logistical and financial fit. The building will house teaching spaces both for the liberal arts, technology, and lab space for teaching the sciences.

The schedule for this project is the most important factor. Holder Construction Company is working to complete the building ahead of schedule in time for the Fall Semester of 2008. The current schedule will allow a move-in date at the end of July with substantial completion slated for July 23rd. The building needs to be substantially complete by June 1st to allow enough set up time to hold classes in September.

The budget for the Education and Technology Center is not as critical, but the UMAEC is still working to obtain funding for the project. UMAEC is still waiting on approximately $10 million to help complete the project with their same expectations. They have not purchased any furniture and technology equipment yet because of a lack of funding. Regardless of the completion date, the building would not be very useful without this equipment. UMAEC is also considering alternatives such as millwork, roofing, and the hardscape/landscape that would be

possible with the extra funding. Holder Construction hopes to free some extra money for this work by trying to manage their contingency as effectively as possible. Holder Construction has also performed several value engineering analyses for cost savings.

Similar to all projects, the Construction Management team and owner must comply with all OSHA standards. Holder Construction Company has an impeccable safety record and strives to maintain a "Zero Accident Culture" with even higher safety standards.

In addition to cost, schedule, and safety goals, UMAEC hopes to have their project delivered with an extremely high level of quality. They hope to maintain a quality that provides a building lifetime of 100 or more years.

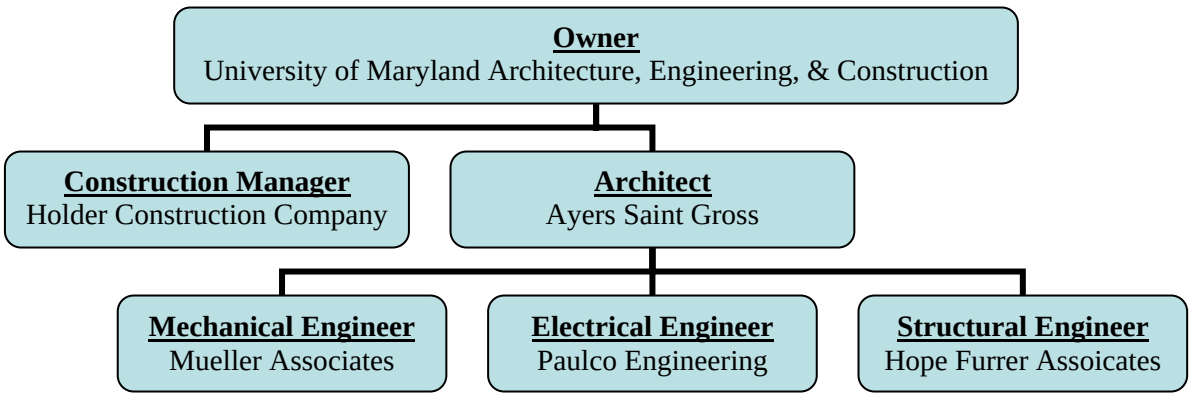
Project Delivery System

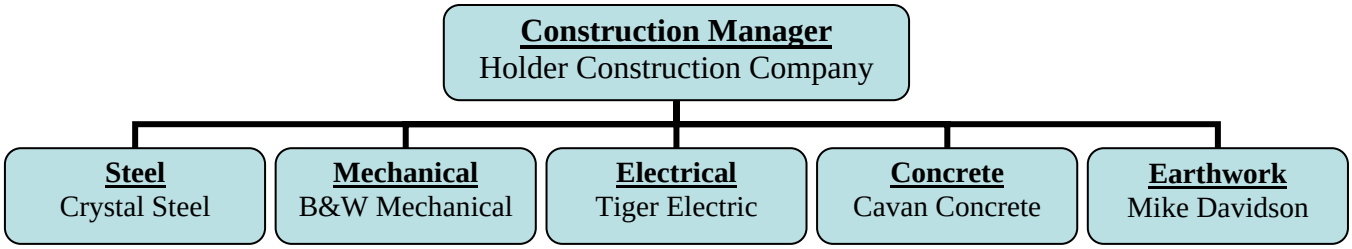
The Teachers Education and Technology Center is being delivered using a Construction Management at risk method. The University of Maryland has used Holder Construction Company is many past projects. Holder will be under a GMP contract with the University of Maryland. The use of the CM at Risk method allows UMAEC to bring Holder into the project very early to advise the owner. The project was awarded to Holder in 2004 and went through the pre-construction phase for two years before breaking ground. The long pre-construction phase creates a team environment very early that ensures the level of quality needed. During pre-construction Holder provided consultations in design, constructability, value analyses, and pricing for the owner. All contracts for Design work will be a lump sump.

Holder requires that all subcontractors have $5 million of insurance coverage. Subcontractors with a contract exceeding $50,000 were required to be bonded. Holder holds general and builder's risk insurance and was required to be bonded with the owner. The owner allowed Holder to hold only a 5% retainage for bonded subcontractors while a 10% retainage was used for non bonded subcontractors. All subcontractors were selected on a low bid basis.

An item of interest of the project is the Center for Conflict Resolution. The UMAEC set up a partnership to help discuss expectations, challenges, and goals during both pre-construction and construction. The partnership helped better define the lines of communication throughout the construction team, design team, consultants, and the owner. The meetings helped make clear how goals would be met and challenges would be faced. These sessions served as team building and developing a level of commitment and vision for the project.

Organizational Chart





Holder Construction Company Staffing Plan

Holder Construction Company split their staff between the pre-construction and operations teams. The pre-construction team was responsible for the two year period prior to breaking ground and the operations team will take care of onsite duties during construction.

The pre-construction team initially worked to contact subcontractors to obtain bids for each of the trades on the project. The team reviewed each bid for compliance with the construction documents and for bid price to determine the best subcontractor to use on the project. A site logistics plan and project schedule was also developed during preconstruction. The final task of the team was to perform value engineering analyses to cut cost from the project budget. As the pre-construction phase got closer to the beginning of construction the team worked with the operations team to revise the schedule and site plan to best fit the construction plan developed by the superintendents.

The operations group consists of a vice president, project director, superintendent, assistant superintendent, senior project manager, senior project engineer, and project engineer. Tom Shumaker, vice president, deals with staffing the job, corresponding with the owner, and resolving any subcontractor or budget issues. The Project Director, David Hyde, overees

multiple University of Maryland projects that Holder is building, ensuring consistency throughout the projects, and also corresponding with the owner. The Senior Project Manager, Shaun Haycock, has duties that involve cost projections, owner billing, cost loading schedules, owner correspondence, etc. Under Shaun Haycock a Senior Project Engineer, Melissa Hardy, manages the MEP and exterior skin trades. She is also involved in the Project Managers duties such as cost projections and cost loading schedules. Dennis Edmonds, the Project Engineer on site, manages the remaining trades. He reviews submittals, shop drawings, and answers RFI's for all trades. The Superintendent, Dan Bohlen, is responsible for the overall site coordination, the construction plan, updating the schedule, etc. Scott Alexander, the Assistant Superintendent, coordinates day to day field operations, maintains quality control, safety and safety orientations, and erosion

control.