

BATH COUNTY SCHOOL BOARD

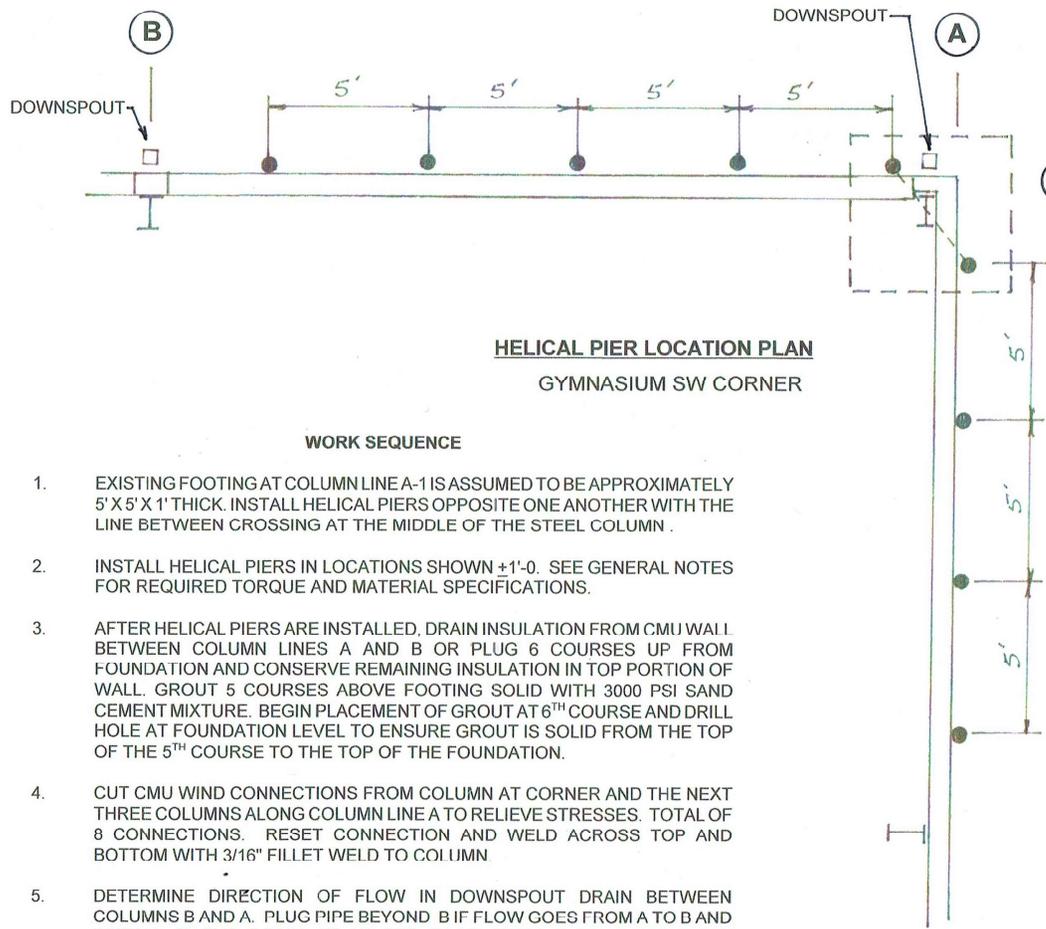
AGENDA ITEM: INFORMATION {    }                      ACTION { X }                      CLOSED MEETING {    }

**SUBJECT:**                      **SUPERINTENDENT’S REPORT - ACTION**

**Consider Approval of VES Gym Foundation Repairs**

**BACKGROUND:**                      **Attached is an engineering study and a written quote for repairs to the structure at the VES gym. This does not include any corrections to the internal gym floor problems or replacing the asphalt that will need to be removed for construction.**

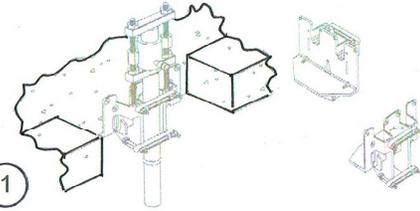
**RECOMMENDATION:**                      **Consider approval due to the nature of the problem and its impact on current budget and current gym related projects that will be forthcoming in future years.**



**HELICAL PIER LOCATION PLAN**  
GYMNASIUM SW CORNER

**WORK SEQUENCE**

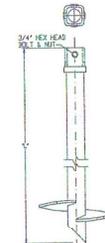
- EXISTING FOOTING AT COLUMN LINE A-1 IS ASSUMED TO BE APPROXIMATELY 5' X 5' X 1' THICK. INSTALL HELICAL PIERS OPPOSITE ONE ANOTHER WITH THE LINE BETWEEN CROSSING AT THE MIDDLE OF THE STEEL COLUMN.
- INSTALL HELICAL PIERS IN LOCATIONS SHOWN  $\pm 1'-0$ . SEE GENERAL NOTES FOR REQUIRED TORQUE AND MATERIAL SPECIFICATIONS.
- AFTER HELICAL PIERS ARE INSTALLED, DRAIN INSULATION FROM CMU WALL BETWEEN COLUMN LINES A AND B OR PLUG 6 COURSES UP FROM FOUNDATION AND CONSERVE REMAINING INSULATION IN TOP PORTION OF WALL. GROUT 5 COURSES ABOVE FOOTING SOLID WITH 3000 PSI SAND CEMENT MIXTURE. BEGIN PLACEMENT OF GROUT AT 6<sup>TH</sup> COURSE AND DRILL HOLE AT FOUNDATION LEVEL TO ENSURE GROUT IS SOLID FROM THE TOP OF THE 5<sup>TH</sup> COURSE TO THE TOP OF THE FOUNDATION.
- CUT CMU WIND CONNECTIONS FROM COLUMN AT CORNER AND THE NEXT THREE COLUMNS ALONG COLUMN LINE A TO RELIEVE STRESSES. TOTAL OF 8 CONNECTIONS. RESET CONNECTION AND WELD ACROSS TOP AND BOTTOM WITH 3/16" FILLET WELD TO COLUMN.
- DETERMINE DIRECTION OF FLOW IN DOWNSPOUT DRAIN BETWEEN COLUMNS B AND A. PLUG PIPE BEYOND B IF FLOW GOES FROM A TO B AND INSTALL 8" PVC DRAIN AT 1/4" PER FOOT FROM B TO A INCLUDING DOWNSPOUT AT B. CROSS DRIVEWAY AND DISCHARGE PIPE APPROXIMATELY 45 FEET FROM COLUMN LINE A. IF FLOW GOES FROM B TO A NOW, CONTACT ENGINEER FOR INSTRUCTIONS.
- INSTALL BACKER ROD AND SEALANT AT COLUMN LINE A AND 2 LOCATIONS AT COLUMN LINE B. USE FOAM BACKER ROD CORRECTLY SIZED FOR EACH OPENING AND SEAL WITH SIKAFLEX 1a OR EQUAL.
- FOR ALL UNDERGROUND WORK, REMOVE ASPHALT AND GATE APPARATUS AND EXCAVATE AS REQUIRED TO ACCESS FOOTINGS AND DOWNSPOUT DRAINS. BACKFILL WITH EITHER COMPACTED FILL MATERIAL ORIGINALLY REMOVED FROM AREA OR #57 VDOT STONE. FILL UPPER 6 INCHES OF FILL WITH COMPACTED #57 STONE FLUSH WITH EXISTING ASPHALT.



**TYPICAL BRACKET INSTALLATION**



**TYPICAL WIND CONNECTION**



**12 INCH SINGLE HELIX CONFIGURATION**

● INDICATES HELICAL PIER LOCATION  
(LOCATION MAY VARY 1')

**MATERIAL SPECIFICATIONS**

- FOUNDATION SYSTEM TO BE MACLEAN-DIXIE HELICAL FOUNDATION SYSTEM OR EQUAL.
- TORQUE CORRELATION METHOD OF DETERMINING THE ULTIMATE CAPACITY OF THE PILE AND THE FINAL INSTALLATION TORQUE OR  $Q_{ult} = Kt$ . INSTALLERS ARE TO BE FACTORY-TRAINED AND CERTIFIED BY THE MANUFACTURER OF THE FOUNDATION SYSTEM.
- INSTALLATION CRITERIA**  
MINIMUM INSTALLATION TORQUE = 5,500 FT-LBS AT COLUMN AND 4,500 FT-LBS AT CMU WALLS OR BEAR ON ROCK.
- HELICAL STEEL PLATES**  
THE HELICES ARE TO BE 12 INCH HIGH STRENGTH LOW ALLOY STEEL PER ASTM A1018 WITH A MINIMUM 55 KSI YIELD STRENGTH AND 65 KSI TENSILE STRENGTH. THE HELICAL PLATES ARE TO BE FACTORY WELDED TO THE PILE SHAFTS.
- PILE SHAFTS**  
PILE SHAFT DIAMETER TO BE 2 7/8"  $\phi$  X .203" WALL CARBON STEEL CONFORMING TO ASM A 500, WITH A MINIMUM 50 KSI YIELD STRENGTH AND 62 KSI TENSILE STRENGTH. COUPLINGS TO BE CAST STEEL CONFORMING TO ASTM A 958 HAVING A MINIMUM 40 KSI YIELD STRENGTH AND 80 KSI TENSILE STRENGTH.
- BRACKET**  
BRACKET TO BE CONSTRUCTED OF DUCTILE IRON, GRADE 654512 PER ASTM A536, HOT DIPPED GALVANIZED PER ASTM A153 AFTER FABRICATION.
- BOLTS**  
COUPLING BOLTS ARE TO BE MINIMUM 3/4" AND CONFORM TO ASTM A 325 AND HAVE AN ASTM A153 HOT-DIPPED ZINC COATING WITH THREADS EXCLUDED FROM THE SHEAR PLANE. MATCHING NUTS MUST CONFORM TO ASTM A 563 GRADE B AND HOT-DIPPED ZINC COATING CONFORMING TO ASTM A153. WASHERS TO CONFORM TO ASME B18.22.1 AND HAVE CLASS C HOT-DIPPED ZINC COATING CONFORMING TO ASTM A 153. HAVING MINIMUM YIELD AND TENSILE STRENGTHS OF 45 AND 65 RESPECTIVELY. BRACKET TO BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A 153.



For: Bath County Schools  
Re: Foundation Repairs  
Valley Elementary School  
98 Panther Dr. Hot Springs, VA

Comprehensive Construction Services, Inc.  
1326 Grandin Road SW  
Roanoke, VA 24015  
(540) 344-3003  
FAX: (540) 344-3337  
December 20, 2016



**XPERT FOUNDATIONS**  
**CORPORATE OFFICE MAILING ADDRESS:**  
**P.O. BOX 12347, ROANOKE VA 24024**  
**PHONE: 540-777-1995 FAX: 540-777-2132**

12/21/16

Bath County Public Schools  
Attention: Mr. Mark Cook  
Director of Maintenance  
markc@bath.k12.va.us

Re: Valley Elementary School, 98 Panther Dr., Hot Springs VA

Dear Mr. Cook:

This letter is for the sole purpose of disclosing the cost for the above Referenced project. The following steps will need to be implemented:

1. Remove existing gate and pole. Re-install upon completion of project (using same gate and pole).
  2. Saw cut the asphalt along the left side front from the corner to the second column downspout (approximately 26 L. ft.) also, saw cut the asphalt on the left side from the corner to five feet (5') off of the utility building (approximately 18 L. ft.).
  3. Excavate down to the footing and prepare the area for helical pier installation (depth calculated for excavation is 3 feet (3')). Haul away excess material.
  4. Contractor will jack hammer the concrete as needed in order to set the brackets under the foundation wall and column (approximately six hours of jack hammering is calculated in this estimate).
  5. Install nine (9) helical piers as outlined in the engineered plans (CCS, Inc.) all piers carry a 20' L. ft. depth clause.
  6. Stabilize section that has piers.
  7. Drain insulation from CMU as outlined in engineered plans (CCS, Inc.). No replacement of insulation is included in estimate.
  8. Install grout in the CMU wall as outlined in engineered plans (CCS, Inc.).
  9. Cut CMU wind connectors and weld in the proper place.
  10. Pipe out two downspouts with an 8" PVC and run to daylight, and also install a foundation drain line.
  11. Apply a joint sealant at two (2) locations.
  12. Backfill with #57 stone up to final grade and tamp stone.
  13. Leave area in broom clean condition.
- Estimated cost, labor and materials...\$42,550.00

Note:

- a. Any jack hammering of concrete past 6 hours will be an additional cost of \$180.00 per hour.
- b. Any helical piers that pass the depth of 20 L. ft. will be at an additional cost of \$40.00 per L. ft. per pier.
- c. If the exposed CMU wall below grade needs to be waterproofed the cost will be given upon discovery and is not included in this estimate.
- d. Excavation beyond three feet (3') has an added cost of \$180.00 per hour.
- e. Estimate includes Building Permit.

If we may be of further assistance or you have questions regarding this estimate, please do not hesitate to call me on my cell: 540-353-3708. We look forward to working with you again.

Sincerely,  
Luis M. Sanchez,  
Senior Certified Foundation Contractor