



REQUEST FOR PROPOSAL

Purchasing Office

801 Crawford Street • Portsmouth, VA 23704

Phone: (757) 393-8261 • Email: purchasing@pps.k12.va.us

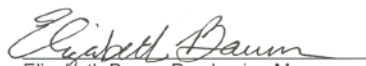
Portsmouth Public Schools hereby seeks sealed proposals for the following:

TITLE: STADIUM LIGHT POLE REPAIR AND REPLACEMENT	
RFP#	781-P-1011
ISSUE DATE	May 9, 2011
PRE-PROPOSAL CONFERENCE CHURCHLAND HIGH SCHOOL	May 17, 2011 at 10:00a.m.
QUESTIONS DUE	May 18, 2011
CLOSING DATE	May 26, 2011
CLOSING TIME	2:00pm EST
PURCHASING MANAGER	Elizabeth Baum

Responses may be mailed or delivered to the address listed above.

No response will be accepted after the above listed date and time.

Please include one (1) original, five (5) copies, and one (1) electronic pdf copy of your proposal on a flash drive.


Elizabeth Baum, Purchasing Manager
Department of Purchasing

REQUEST FOR PROPOSAL – COVER SHEET

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**Sealed proposals may be mailed or delivered to the Issuing Office listed below.
Please provide one (1) original, five (5) copies, and one (1) electronic pdf copy of your
proposal on a flash drive**

Issuing Office: As the Issuing Office, the following individual, or his/her designee, shall serve as the interpreter of the conditions of the contract and shall use all powers under the contract to enforce its faithful performance:

Elizabeth Baum, Purchasing Manager
801 Crawford Street, Portsmouth, VA 23704
(757) 393-8261, elizabeth.baum@pps.k12.va.us

Contract Administrator: All service questions, post contract award, shall be communicated through:

Nita Mensia-Joseph, Director of Operations
(757) 393-8332, nita.mensia-joseph@pps.k12.va.us

**The following section must be executed and signed by an authorized representative of your company and
returned as part of your response.**

Company Name

Federal ID #

Address

Phone #

City, State, Zip

Fax #

Email Address

D-U-N-S® number

Name of Authorized Signatory

Title

Signature

Virginia State Corporation Commission Number (SCC#)

The signatory hereby certifies that he/she is authorized to sign on behalf of the Offeror and that he/she has carefully examined all conditions of proposal and requirements attached hereto and made a part hereof and hereby submits this proposal pursuant to such instructions and requirements. The Offeror also expressly warrants that the information submitted herein is not the result of an agreement expressed or implied with any other Offeror or Offerors in an attempt to influence or restrict competition.

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I. General Terms and Conditions

The conditions set forth herein apply to all Proposals rendered to the School Board of the City of Portsmouth, VA, hereinafter referred to as the School Board. All Offerors are bound by these conditions. Please read these conditions carefully, as they are an integral part of the agreement and contract awarded to the successful Offeror.

A. Procedure:

1. **Discrepancies or Omissions:** In the event an Offeror finds any discrepancies or omissions in the Request for Proposal, or has any doubt as to its meaning, he shall notify the Purchasing Manager, 801 Crawford Street, 3rd Floor, Portsmouth, VA, 23704 at once. If it is found necessary, a written addendum will be sent to each Offeror. All addenda so issued shall become a part of the contract document and will be signed and returned with the Proposal. Requests for such interpretation should be in writing, addressed to the Purchasing Manager not later than five (5) days prior to the date fixed for RFP closing. Oral responses, instructions, or questions do not form any part of the Request for Proposal.
2. **Internet Access:** All bids may be viewed on THE SCHOOL BOARD's website at www.pps.k12.va.us or download from www.demandstar.com or www.eva.virginia.gov
3. **Submission:** The Proposal must be:
 - 1) Sealed and submitted in a plain opaque envelope.
 - 2) Addressed to Purchasing Manager, Portsmouth Public Schools, 801 Crawford Street, 3rd Floor, Portsmouth, Virginia 23704.
 - 3) Clearly marked: The RFP number and closing date stated in the RFP must appear on the envelope.
 - 4) Separated from packages or envelopes containing Proposal samples.
4. **Opening:** Proposals will be opened at the time and date fixed for RFP closing. The name of each Offeror will be read, recorded and posted. Proposal openings will be at 801 Crawford Street, 3rd Floor, Portsmouth, VA 23704. In accordance with the Virginia Public Procurement Act, Section 2.2-4342, the proposals shall be open to public inspection **only after award** of the contract.
5. **Samples:** All samples requested in the proposal must be identified with Offeror's name, our RFP number, item number and delivered to the Purchasing Manager prior to closing date. All samples requested in the proposal must be identified with Offeror's name, our proposal number, item number and delivered to the Purchasing Manager prior to proposal opening. Any samples that may be requested after the proposal opening must be delivered to the Purchasing Manager within five (5) working days of the request. All samples are to be supplied at the Offeror's expense. All samples must be reclaimed within fifteen (15) days after notification in writing except those needed to compare with delivered material or used in testing and evaluation. The School Board will not be responsible for samples that have not been reclaimed after fifteen (15) days of notification.
6. **Corrections:** Any proposal submitted with corrections must have the corrections initialed by the person who signed the proposal.
7. **Proposal Cost:** Proposals are to be submitted in accordance with the Request for Proposal. All costs incurred for proposal preparation shall be the responsibility of the Offeror.
8. **Validity:** All information requested in the Request for Proposal must be completed in order to constitute a valid proposal. The School Board reserves the right to require selected Offerors to make an oral presentation of their proposal.
9. **Deviations:** Any deviations from the specifications must be set forth in the proposal.
10. **Format:** Prices and information required, except for the signature of the Offeror, should be typewritten for legibility. Illegible or vague proposals will be rejected. The signature of the person submitting the proposal must be handwritten.
11. **Brand Names:** The use of a brand name, make or manufacturer within the specifications does not restrict the Offeror solely to that specified. Instead, it serves to convey to the Offeror the style, type, character and quality of the item desired. Any item which the School Board in its sole discretion determines to be equal of that specified, considering quality, workmanship, economy of operation and suitability for the purpose intended shall be accepted. It shall be the responsibility of the Offeror to submit an exact description of the proposed alternate and, if requested, to provide exact samples of the proposed item prior to contract award.
12. **Informed:** In submitting a proposal, the Offeror signifies that he is fully informed as to the extent and character of the supplies, materials, equipment and services necessary to perform this proposal in accordance with all documents constituting the proposal and will comply satisfactorily with the proposal documents.

13. **Prior Inspection:** The Offeror signifies that, when necessary, he has inspected the site on which work shall be done and is aware of all conditions affecting the execution of work contained within the proposal documents.
14. **Taxes and Permits:** The contractor shall pay all sales, consumer, use and other similar taxes for work or portions thereof provided by the contractor which are legally enacted at the time proposals are received, whether or not yet effective. The contractor shall also obtain and pay for all permits necessary to complete the project as indicated in the proposal documents.
15. **Equipment:** Proposals on equipment must be standard new equipment of latest models and in current production.
16. **Electrical Codes:** All regular manufactured stock electrical items must meet all federal, state and local codes.
17. **Charges:** All prices in the proposal shall be for all equipment, materials, supplies (including delivery), labor and any incidental expenses incurred by the Offeror. No other charges may be added.
18. **Ethics:** The Offeror expressly warrants that the information submitted herein is not the result of an agreement or understanding expressed or implied with any other Offeror or Offerors in an attempt to influence or restrict competition.

B. Withdraw of Proposal:

1. Proposals may be withdrawn or modified any time before proposal closing.
2. The Offeror may withdraw his proposal from consideration after proposal opening if an error in price is due solely to a mistake therein, provided the proposal was submitted in good faith and the mistake was a clerical mistake as opposed to a judgment mistake. A clerical mistake is defined as an unintentional arithmetical error or an unintentional omission of a quantity of work, labor or materials made in the compilation of a proposal. The unintentional arithmetical error or unintentional omission must be clearly shown by objective evidence drawn from inspection of original work papers, documents and materials used in the preparation of the proposal sought to be withdrawn.
3. Withdrawal Procedures:
 - 1) The Offeror shall give notice in writing to the Purchasing Manager, Portsmouth Public Schools, 801 Crawford Street, 3rd Floor, Portsmouth, VA 23704 of his claim of right to withdraw his proposal within two business days after the conclusion of the proposal opening procedure and shall submit original work papers with such notice. Such mistakes shall be proved only from the original work papers, documents and materials delivered as required herein.
 - 2) No proposal may be withdrawn under this section when the result would be the awarding of the contract on another proposal of the same Offeror or of another Offeror in which the ownership of the withdrawing Offeror is more than five percent (5%).
 - 3) No Offeror who is permitted to withdraw a proposal as allowed in sections 16a. and 16b. of this document shall, for compensation, supply any material or labor to, or perform any subcontract or other work agreement for, the person or firm to whom the contract is awarded or otherwise benefit, directly or indirectly, from the performance of the project for which the withdrawn proposal was submitted.
 - 4) If the School Board denies the withdrawal of a proposal, it shall notify the Offeror in writing stating the reasons for its decision and award the contract to such Offeror at the proposal price, provided such Offeror is responsible and responsive.

C. Discrimination by contractor:

1. The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
2. The contractor, in all solicitations or advertisements for employees placed by or on behalf of the contractor, will state that such contractor is an equal opportunity employer.
3. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.
4. The contractor will include the provisions of the foregoing paragraphs 1, 2 and 3 in every subcontract or purchase order of over ten thousand dollars (\$10,000), so that the provisions will be binding upon each subcontractor or vendor.

D. Small, Women & Minority-Owned (SWaM) Business:

Portsmouth Public Schools encourages solicitation from Small, Women Owned and Minority business suppliers. Portsmouth Public Schools solicitations and contract awards shall not discriminate against a bidder or Offeror because of race, religion, color, sex, national origin, age, disability or any other basis

prohibited by state law and School Board policy relating to discrimination in employment. Portsmouth Public Schools is committed to ensuring fair consideration of all suppliers in its day-to-day procurement of services, suppliers and construction. Providing the opportunity for a wide-range of suppliers provides a competitive edge in producing high-quality, low cost innovative products and services. Portsmouth Public Schools utilizes the following resources to identify SWaM businesses:

- Virginia Department of Minority Business Enterprise (VDMBE)
- Virginia Minority Supplier Development Council (VMSDC)

E. Drug-Free Workplace:

During the performance of this contract, the contractor agrees to (1) provide a drug-free workplace for the contractor's employees; (2) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (3) state in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (4) include the provisions of the foregoing clauses in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

For the purposes of this section, "**drug-free workplace**" means a site for the performance of work done in connection with a specific contract awarded to a contractor in accordance with the Virginia Public Procurement Act, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.

F. Contractor Employee Background Certification:

In compliance with the Code of Virginia 22.1-296.1, prior to awarding a contract for the provision of services that require the contractor or his employees to be in the presence of students during regular school hours or during school-sponsored activities, the School Board will require the contractor, and when relevant, any employee who will have direct contact with students to provide certification:

1. that the applicant has not been convicted of a felony or any offense involving the sexual molestation, physical or sexual abuse or rape of a child; and
2. whether the applicant has been convicted of a crime of moral turpitude.
3. As a condition of awarding a contract for the provision of services that require the contractor or his employees to have direct contact with students on school property during regular school hours or during school-sponsored activities, the School Board shall require the contractor to provide certification that all persons who will provide such services have not been convicted of a felony or any offense involving the sexual molestation or physical or sexual abuse or rape of a child. Contractor shall not send any employee or agent who is a registered sex offender to any school building or school property. Monthly, the contractor shall check the Sex Offender and Crimes Against Minors Registry to determine if any employee is registered.
4. Any person making a materially false statement regarding any such offense shall be guilty of a Class 1 misdemeanor and, upon conviction, the fact of such conviction shall be grounds for revocation of the contract to provide such services and, when relevant, the revocation of any license to provide such services. School boards shall not be liable for materially false statements regarding the certifications required by this subsection. This subsection shall not apply to a contractor or his employees providing services to a school division in an emergency or exceptional situation, such as when student health or safety is endangered or when repairs are needed on an urgent basis to ensure that school facilities are safe and habitable, when it is reasonably anticipated that the contractor or his employees will have no direct contact with students.

G. Authorization to Transact Business in the Commonwealth of Virginia

Pursuant to Code of Virginia, section 2.2-4311.2, a contractor organized as a stock or nonstock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability partnership shall be authorized to transact business in the Commonwealth as a domestic or foreign business entity if so required by Title 13.1 or Title 50 or as otherwise required by law. A bidder organized or authorized to transact business in the Commonwealth pursuant to Title 13.1 or Title 50 shall include in its bid the identification number issued to it by the State Corporation Commission. Any bidder that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50 or as otherwise required by law shall include in its bid a statement describing why the bidder is not required to be so authorized. Any bidder that fails to provide the required information shall not receive an award unless a waiver of this requirement and the administrative policies and procedures established to implement this section is granted by the chief executive of a local governing body. Any business entity that enters into a contract with a public body pursuant to this chapter shall not allow its

existence to lapse or its certificate of authority or registration to transact business in the Commonwealth, if so required under Title 13.1 or Title 50, to be revoked or cancelled at any time during the term of the contract. A public body may void any contract with a business entity if the business entity fails to remain in compliance with the provisions of this section.

H. Immigration Reform and Control Act of 1986:

Pursuant to Code of Virginia, section 40.1-11.1, Contractor agrees that it does not currently, and shall not during the performance of this contract; knowingly employ an unauthorized alien, as defined in the Federal Immigration Reform and Control Act of 1986.

I. Contract Negotiations and Award:

1. The School Board reserves the right to award a contract on the basis of initial proposals received, without discussion, if it determines, in its sole discretion, that only one Offeror is fully qualified or that one Offeror is clearly more highly qualified and suitable than the others under consideration.
2. The School Board reserves the right to reject any or all proposals and to waive any and all technicalities and informalities.
3. If the proposal exceeds funds available, the School Board may reject all proposals or negotiate with the low Offeror.
4. **Availability of Funds:** The contract resulting from this RFP is subject to the availability of appropriations for the purpose of the contract. For multi-year contracts or contracts with optional renewals, the possibility exists that funds may not be available. If funds are not appropriated in future years for the purpose of this contract, the School Board reserves the right to cancel the contract without penalty.
5. The School Board reserves the right to negotiate with the contractor for any additional work needed, to rebid the additional work, or to perform additional work with own in-house staff whichever is most advantageous to the School Board.
6. The School Board reserves the right to make awards within ninety (90) days after the date of the proposal opening during which period proposals may not be withdrawn unless the Offeror distinctly states in his proposal that acceptance thereof must be made within a shorter specified time.
7. The contract will become effective on the date the School Board notifies an Offeror in writing, (formal contract, purchase order, letter), of its acceptance of the Offeror's proposal.
8. The school system may order changes in the work and the contracted sum shall be adjusted accordingly. All such orders and adjustments shall be in writing. Claims by the contractor for extra cost must be submitted in writing and approved by the authorized representative of the school system named in the proposal before executing any work.
9. When materials, equipment or supplies are rejected, they must be removed by the successful Offeror from School Board property within ten (10) days from notification. Materials, equipment or supplies left longer than ten (10) days will be considered abandoned by the successful Offeror and may be disposed of as if it were School Board property.
10. The successful Offeror shall not assign, transfer, convey, sublet or otherwise dispose of the contract or his right, title, or interest therein or his power to execute such contract, to any other person, company or corporation without the prior written consent of the School Board.

J. Contract Default:

If the successful Offeror fails to perform within the time specified or fails to perform satisfactorily in accordance with the specifications, the School Board may take appropriate action to satisfy the contract. If the contractor cannot respond within the designated time limit, the School Board reserves the right to contract with another source. Any cost incurred in excess of the contract amount may be back charged to the original Offeror. Should the difference be less, the successful Offeror shall have no claim to the difference. Additionally, the original Offeror may be removed from the Bid List.

K. Cooperative Procurement:

Any resultant contract of this solicitation may be extended to any public agency or body in the Commonwealth of Virginia to permit those public agencies or bodies to purchase at contract prices, in accordance with the terms, conditions and specifications of this bid (Code of Virginia Chapter 43, Article 2 §2.2-4304). The successful bidder shall deal directly with each public agency or body in regard to order placement, delivery, invoicing and payment.

Note: Portsmouth Public Schools would in no way be involved in the authorized agency or body purchasing procedure other than to reference Portsmouth Public Schools' bid number. Portsmouth Public Schools shall not be held liable for any costs or damage incurred by another jurisdiction as a result of any award extended to that jurisdiction or political subdivision by the awarded Contractor.

L. Delivery and Installation:

1. Equipment and supplies shall be stored at the site only on the approval of the School Board and at the successful Offeror's risk.

2. Work shall progress in such a manner as to cause the least inconvenience to the Portsmouth School Board.
3. The successful Offeror shall remove all debris and rubbish resulting from his work.
4. Delivery to Portsmouth Public Schools, as required in the specifications, shall be at the Offeror's expense.
5. A delivery receipt fully describing the order shall be furnished at time of delivery. The delivery receipt shall cite the purchase order number. Goods will not be accepted without a delivery receipt which contains the purchase order number.
6. Partial orders will be accepted and payment processed providing the order is identified with a delivery receipt containing the purchase order number.
7. All discrepancies will be clearly marked on the delivery receipt and/or purchase order and the Offeror will be notified of discrepancies.

M. Invoice/Payment:

1. Invoices shall be sent to the Portsmouth School Board, P.O. Box 998, Portsmouth, VA 23705. Invoices shall cite the purchase order number. The School Board reserves the right to return incorrect invoices, including invoices not citing the purchase order number, to the contractor for correction. Payment terms shall be net 30 days from receipt of goods and/or services of invoice, whichever is later.
2. Within seven (7) days after receipt of payment, the contractor will:
 - 1) Pay any subcontractor for the proportionate share of the total payment received attributable to the work performed by the subcontractor; or
 - 2) Notify the School Board and subcontractor, in writing, of his intention to withhold all or a part of the subcontractor's payment with the reason for nonpayment.
3. The contractor is obligated to pay interest to any subcontractor on all amounts owed by the contractor that remain unpaid after seven (7) days following receipt by the contractor of payment from the School Board, except for amounts withheld in accordance with paragraph 2 above. Unless otherwise provided under the terms of this contract, interest shall accrue at the rate of one percent (1%) per month.
4. The contractor shall include in each of its subcontracts a provision requiring each subcontractor to include or otherwise be subject to the same payment and interest requirements of paragraphs 2 and 3 above with respect to each lower-tier subcontractor.

N. Guarantee-Warranty:

1. The successful Offeror shall supply quality goods to the Portsmouth School Board which are guaranteed against defect or faulty material or workmanship for a minimum period of one year or the duration of product warranty, whichever is longer. All goods shall be warranted by the Offeror as appropriate to each item specified.
2. Any merchandise provided under the contract which becomes defective during the warranty period shall be corrected or replaced to the satisfaction of the School Board by the successful Offeror free of charge with the specific understanding that all replacements shall carry the same guarantee as the original material. The successful Offeror shall make any such replacement immediately upon receiving notice from the School Board.
3. The successful Offeror guarantees to furnish adequate protection from damage for all work and repair damages of any kind to the building or equipment, to his own work or to the work of other workmen for which he or his workmen are responsible.

O. Insurance:

Prior to undertaking performance of the contract, the contractor shall furnish certification in a form acceptable to the School Board that the contractor possesses a valid liability insurance policy issued by an insurance company licensed to do business in Virginia with effective dates and limits of liability as required by the School Board. This certification shall insure the contractor's legal liability for injury to or destruction of property (real or personal) and bodily injury or death caused in whole or part by any act of omission of the contractor, the contractor's subcontractors and the agents and employees of either, occasioned directly or indirectly in the performance of the contract. The School Board shall be named as an additional insured on every such policy and proof thereof shall be provided to the School Board.

P. Indemnification:

The contractor agrees to indemnify and save harmless the School Board, from and against all claims, damages, losses, judgments and expenses (including attorney's fees) arising out of or resulting from the performance of the work provided that any such claim, damage, loss or expense:

1. is attributable to bodily injury, sickness, disease or death or to injury or destruction of property (real or personal) including loss of use resulting there from, and

2. is also caused in whole or in part by any act or omission of the contractor, any subcontractor, anyone directly or indirectly employed or controlled by any one of them regardless of whether or not said claims, damage, loss or expense is caused in part by the School Board.
3. In any or all claims against the School Board or any of its agents or employees by any employee of the contractor or any subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts any one or more of them may be liable, the indemnification obligation of the contractor hereunder shall not be limited in any way on the amount or type of damages, compensation or benefits payable by or for the contractor of any subcontractor under the Workman's Compensation Act, or any disability benefit acts or any other employee benefit act of the Commonwealth of Virginia.

Q. Bonding:

1. Performance Bond and Labor and Material Payment Bond

- 1) All jobs estimated in excess of one hundred thousand dollars (\$100,000) may require a Performance Bond prior to commencing work.
- 2) The School Board reserves the right to examine and approve the bond before completing the contract. Cost of obtaining said bond shall be the responsibility of the contractor.

R. Qualifications of Offerors:

The School Board may make such reasonable investigations as deemed proper and necessary to determine the ability of the Offeror to perform the services/furnish the goods and the Offeror shall furnish to the School Board all such information and data for this purpose as may be requested. The School Board reserves the right to inspect Offeror's physical facilities prior to award to satisfy questions regarding the Offeror's capabilities. The School Board further reserves the right to reject any proposal if the evidence submitted by, or investigations of, such Offeror fails to satisfy the School Board that such Offeror is properly qualified to carry out the obligations of the contract and to provide the services and/or furnish the goods stated herein.

S. Licenses and Certification:

1. Each contractor should make himself aware of the Portsmouth codes and regulations relevant to required licenses and permits and shall be in compliance with said codes and regulations.
2. The School Board and any consultant acting for the School Board are not responsible for any contractor's licensing or patent infringements.
3. All contractors and subcontractors shall have a valid State Contractor's License, as applicable for the scope and classification of the job to be performed by each contractor or subcontractor. The contractor shall provide his contractor's license number on the proposal form and submit a copy of his license with the proposal form. The contractor shall provide copies of the subcontractors' licenses after proposal opening.

II. Special Terms and Conditions

A. Failure to Deliver:

Failure to comply with the terms and conditions of this solicitation or to deliver goods and/or services identified in the solicitation and resulting contract as negotiated will be considered default of the contract award. Should the contractor fail to deliver an order at the time specified, or should the contractor fail to make timely replacement of rejected items when so requested, the School Board may purchase items/services of comparable quality in the open market to replace the rejected or undelivered items/services. The contractor shall reimburse the School Board for all costs above the contract price when purchases are made in the open market.

B. Contact with the School Board's Staff, Representatives and/or Agents:

Direct contact with the School Board's staff, representatives and/or agents other than Purchasing staff on the subject of this RFP or any subject related to this RFP is expressly prohibited except with the prior knowledge and permission of the Purchasing Manager. All questions prior to the awarding of this contract shall be made to the Issuing Office.

C. Offerors of Record:

Offerors receiving a copy of this RFP from a source other than the Purchasing Office via www.demandstar.com or www.eva.virginia.gov must contact the Purchasing Office and provide the Offeror's name, address, contact person, telephone and fax numbers and the RFP number. Offeror will be added to the Demand Star planholders' list and will receive notification of any addenda to this RFP.

D. Pre-Proposal Conference:

There will be a non-mandatory pre-proposal conference on **Tuesday, May 17, 2011 at 10:00a.m.** at Churchland High School, 4301 Cedar Lane, Portsmouth, VA.

E. Questions and Addenda:

Any/all questions regarding this RFP shall be made in writing to the Issuing Office no later than **Wednesday, May 18, 2011**. Changes or modifications to this RFP made prior to the date and time of closing will be addressed by addenda from the Issuing Office. Offerors are to acknowledge receipt of addenda by signing and returning addenda documents along with the Offeror's proposal. Oral communications are not a part of the proposal documents. This RFP and any addenda shall be incorporated, by reference, into any resulting contract.

Offeror is responsible for checking the www.demandstar.com or www.eva.virginia.gov Web site or contacting the Issuing Office prior to proposal closing to secure any addenda issued for this RFP.

F. RFP Closing:

Offeror shall ensure its proposal is time stamped by the Issuing Office no later than the closing date and time shown on the cover of this RFP. Proposals received after the specified date and time (ex: time stamped 2:01 or later) will not be considered and will be returned to the Offeror unopened.

G. Notice of Award:

Any contract award resulting from this RFP will be publicly posted for inspection in the Purchasing Office, 801 Crawford Street, 3rd Floor, Portsmouth, VA 23704.

H. Cost of Responding:

This solicitation does not commit the School Board to pay any costs incurred by the Offeror of any other party in the preparation and/or submission of proposal or in making necessary studies or designs for the preparation thereof, nor is the School Board obligated to procure or contract for such services.

III. Scope of Work

The purpose of this solicitation is to establish a contract to repair or replace the four steel football light poles and sixteen wooden field light poles at Churchland High School and the four concrete football light poles at I. C. Norcom High School per the attached Engineer Report. Contractor shall furnish all labor, supervision, tools, equipment, materials, supplies, transportation and incidentals.

A. References

1. July 22, 2010, Stroud, Pence & Associates, LTD. Report

B. Specifications

CHURCHLAND HIGH SCHOOL

4301 Cedar Lane

Portsmouth VA, 23703

Steel Poles

Pole #1 - Surface rust needs to be cleaned/inspected/paint touched up.

Pole #2 - Conduit needs to be replaced and rust cleaned from pole and paint touched up.

Pole #3 - Base plate grout needs to be repaired and rust cleaned and paint touched up.

Pole #4 - Rust needs to be removed and pole paint touched up.

Wooden Poles

Pole #5 – No work required.

Pole #6 – No work required

Pole #7 - Evaluate pole for section loss at bottom to ensure structural integrity. Recommend repair or replacement if necessary and provide price proposal.

Pole #8 - Pole exceeds Plumb tolerance and needs to be evaluated for repair/replacement. Recommend repair or replacement if necessary and provide price proposal.

Pole #9 - Pole needs to be evaluated for 3 areas of section loss and exceeds plumb tolerance. Recommend repair or replacement if necessary and provide price proposal.

Pole #10 - Evaluate cracks and recommend repairs as necessary and provide price proposal.

Pole #11 – No work required.

Pole #12 - Evaluate cracks and recommend repairs as necessary and provide price proposal.

Pole #13 – No work required

Pole #14 - Pole exceeds plumb tolerance. Evaluate for repair/replacement and provide price proposal.

Pole #15 - Evaluate section loss at bottom and make recommendations for repair and provide price proposal.

Pole #16 - Pole exceeds plumb tolerance. Evaluate for repair/replacement and provide price proposal.

Pole #17 - Pole has numerous holes affecting structural integrity. Evaluate for repair/replacement and provide price proposal.

Pole #18 – No work required.

Pole #19 - Pole exceeds plumb tolerance. Evaluate for repair/replacement and provide price proposal.

Pole #20 - Pole exceeds plumb tolerance. Evaluate for repair/replacement and provide price proposal.

I.C. NORCOM HIGH SCHOOL

1801 London Blvd

Portsmouth, VA 23704

Pole #1 - Certify safety cable to ensure safe operation.

Pole #2 - Repair cracks along form seam on south side of pole. Certify/repair safety cable for safe operation to include corrosion protection.

Pole #3 - Repair cracks along form seam on south/north side of pole. Certify/repair safety cable for safe operation to include corrosion protection.

Pole #4 - Repair cracks along form seam on south/north side of pole. Certify/repair safety cable for safe operation to include corrosion protection.

C. General Requirements

1. Contractor's Personnel

Contractor shall represent that he has, or will secure at his own expense, all personnel required in the performance of the contract. Such personnel shall not be employees of or have any contractual relationship to Portsmouth Public Schools other than through this contract. All work under this contract shall be performed by properly trained and competent personnel and shall be in accordance with the industry standards. Contractors shall be responsible at all times for the actions and work of their personnel.

2. Work Hours

Normal work hours are 6:00 a.m. to 5:00 p.m., Monday through Friday. Should the Contractor desire to work beyond normal work hours they must submit their request for approval to the Contract Administrator prior to the time in which work outside the normal hours commences.

3. Work Schedule

Offeror shall provide a detailed work schedule with an anticipated start date of June 27, 2011 and a final completion date of August 12, 2011. Contractor shall provide work schedule with material delivery, installation and completion dates no later than five (5) days after award. No extension of the contract time will be authorized due to negligence or incompetence on part of the Contractor.

4. Job Site Inspection

Offeror shall visit and inspect each job site prior to submitting a proposal on this project to fully understand the nature of the work, equipment and facilities needed during work and all other matters which in any way affect the work under this project.

5. Final Inspection and Acceptance

At the conclusion of the work, the Contractor shall demonstrate to the Contract Administrator that the work is fully completed and in compliance with contract specifications and codes. Any deficiencies shall be promptly and permanently corrected by the Contractor at the Contractor's sole expense prior to final acceptance of the work. The contract is not consider fulfilled until the Contract Administrator signs his approval following final inspection.

6. Liquidated Damages

The Contractor recognizes that the delay in achieving the final completion date will necessarily cause damages, losses, and expenses to the Owner. All parties recognize that damages, losses, and expenses might not be readily ascertainable at the time they occur or at any future time. Therefore, and in recognition of these factors, \$300.00 per day shall be set as Liquidated Damages, for the period beginning on the Final Completion Date and extending through the actual date of Final Completion.

Liquidated damages shall be assessed against the Contractor only for his negligent acts and his failure to act in accordance with the terms of this Agreement, and in no case for the delays or causes arising outside the scope of this Contract, or for which other contractors are responsible.

7. Delivery, Storage, and Handling

Contractor is responsible for the safe delivery, storage, and security of all materials, equipment, and supplies.

8. Permits

Contractor shall obtain any and all permits required prior to beginning of work and installation shall comply with all applicable federal, state and local codes and standards.

9. **Emergencies**

Contractor shall provide a contact name(s) and phone number(s) in case of emergencies. In an emergency affecting the safety of persons or property, the Contractor shall act to prevent threatened damage, injury or loss.

10. **Site Supervision**

Contractor shall provide an experienced supervisor who must be on site at all times when a crew is working. All personnel engaged in the work shall be fully qualified and shall be authorized or permitted under state and local law to perform such services. Contractor shall cause as little inconvenience as possible and maintain the worksite from any conditions that may result in danger or nuisance to the public. The supervisor must have the ability to verbally communicate in English with the PPS designee and/or inspector.

11. **Installation**

All materials shall be installed in accordance with manufacturers' installation instructions. Installation and renovation shall include all material, equipment, labor and supervision to provide a complete turnkey system. Contractor shall cause as little inconvenience as possible and maintain the worksite from any conditions that may result in danger or nuisance to the public.

12. **Waste Disposal**

Contractor shall, at his own expense, legally dispose of waste materials.

13. **Warranty**

Contractor shall guarantee all workmanship to be free of defects for a period of five years from the date of final acceptance. If a defect in workmanship is found within the warranty period, Contractor shall repair the defect at no cost to PPS.

D. Projected Timetable

PPS anticipates providing a notice to proceed on June 24, 2011 with a final completion date of August 12, 2011.

IV. Submittal Requirements

The proposal shall be sufficient to enable personnel to make a thorough and complete evaluation and to arrive at a sound determination as to whether the requirements of this solicitation are understood and satisfied. To facilitate this evaluation, the proposal shall be sufficiently specific, detailed and complete to demonstrate clearly and fully that the Offeror has a thorough understanding of the requirements. In preparing the proposal, emphasis should be placed on brief, complete and factual data in the areas of evaluation.

Please include one (1) original, five (5) hard copies , and one (1) electronic pdf copy of your proposal on a flash drive. Proposals shall be submitted on 8 ½” x 11” paper and prepared simply and concisely. Elaborate artwork, expensive paper, bindings, visual and other presentation aids are not required.

Each Offeror’s proposal shall include the following indexed sections, with each tab clearly labeled as listed below. All prices are subject to negotiation.

TAB 1- Statement of Interest and Qualifications

Provide name of firm and location of the office. Provide a statement of interest and the ability to provide the required services. This statement of interest should include any information that is considered essential to the proposal, the names of persons authorized to make representations for the firm, their titles, address and telephone numbers and must be signed by an individual authorized to conduct business for the firm

Offeror shall demonstrate in this section that the firm has the organization, administrative control, and specific qualifications necessary to assure the requirements described herein can be met.

Offeror shall also clearly state its ability to complete all proposed work within the required timeline.

TAB 2 – Approach to Scope of Work

Provide a pole-by-pole description of your recommended repairs and replacements.

TAB 3 – References

The Offeror shall provide a list of current and previous contracts within the past five years. List the name of each firm, the contract period, name of contact person, address and telephone number, and a description of work.

TAB 4 – Price Proposal

Offeror shall complete the price proposal form that will indicate the corresponding cost of your recommended repairs/replacements from Tab 2. Prices may be subject to negotiation.

V. Selection Process and Award

A. Evaluation and Award Criteria:

1. Approach to providing required services
2. Price proposal and best long-term value
3. Qualifications of company and references

B. Award of Contract

Selection shall be made of the two or more Offerors deemed to be fully qualified and best suited among those submitting proposals on the basis of the evaluation factors identified above. Negotiations shall be conducted with the Offeror(s) selected. Costs shall be considered but need not be the sole determining factor. After negotiations have been conducted with each Offeror selected, the School Board shall select the Offeror which in its opinion, has made the best proposal and shall award the contract to the Offeror. The School Board may cancel the RFP, reject proposals or any portion thereof at any time prior to award and is not required to furnish a statement of the reason why a particular proposal was not deemed to be the most advantageous. (Section 2.2-4359D, Code of Virginia) Should the School Board determine in writing and in its sole discretion that one Offeror is clearly more highly qualified than the others under consideration; a contract may be negotiated and awarded to that Offeror. The award document will be a contract incorporating by reference all the requirements, terms and conditions of this solicitation and the Contractor's proposal as negotiated.

The School Board reserves the right to award multiple term contracts as a result of this solicitation.

VI. List of Appendices

- A. Contractor Employee Background**
- B. Insurance Specifications**

VII. List of Attachments

- A. Price Proposal Form**
- B. Stroud, Pence & Associates, Ltd. Report – Churchland High School**
- C. Stroud, Pence & Associates, Ltd. Report – I.C. Norcom High School**

APPENDIX A

I certify that the applicant firm is in compliance with the *Code of Virginia* § 22.1-296.1, regarding providing certification from the company and any employee that will come in direct contact with students, for the provision of services under this contract.

I certify that the applicant firm and any of its employees, that will come in direct contact with students, have (i) never been convicted of a felony or any offense involving the sexual molestation or physical or sexual abuse or rape of a child; nor (ii) convicted of a crime of moral turpitude.

BY: _____ (SIGNATURE)
 _____ (PRINTED NAME)
 _____ COMPANY
 _____ BUSINESS ADDRESS

 _____ DATE

Employee Certifications (Employees that will come in direct contact with students)

I certify that I have (i) never been convicted of a felony or any offense involving the sexual molestation or physical or sexual abuse or rape of a child; nor (ii) convicted of a crime of moral turpitude.

[illegible]

(Attach certification sheets as necessary)

APPENDIX B

INSURANCE SPECIFICATIONS

The Offeror shall carry Liability Insurance in the amount specified below; including the contractual liability assumed by the Offeror and shall deliver Certificate of Insurance from carriers acceptable to the owner specifying such limits. The School Board shall be named as an additional insured on each such certificate of insurance. The verbiage on the Certificate of Liability Insurance must state in the Description of Operations box, "Portsmouth Public Schools is an additional insured."

1. Workmen's Compensation and Employer's Liability

Coverage A – Statutory Requirements
Coverage B - \$100,000 per Occurrence
Coverage C - \$100,000 Accident and/or Disease
All States Endorsement

2. Automobile Liability, including Owned, Non-owned and Hired Car Coverage

Limits of Liability

Bodily Injury	\$500,000 each person
	\$500,000 each occurrence
Property Damage	\$500,000 each occurrence

Including –

- A. Completed Operations/Products
- B. Contractual Liability for Specified Agreement
- C. Personal Injury
- D. (XCU) Explosion, Collapse and Underground Coverage
- E. Broad Form Property Damage

NOTE 1: To satisfy the requirements of 2-D above, the classification code numbers appearing on the Comprehensive General Liability coverage parts shall not include the symbols "XCU."

NOTE 2: Property Insurance: The Offeror shall purchase and maintain property insurance upon the entire work at the site and such materials and equipment as are stored at the site or at an agreed upon location to the full insurable value thereof. This insurance shall include the interests of the Owner, the Offeror and subofferors in the work and shall insure against the perils of fire and extended coverage and shall include "all risk" insurance for physical loss and damage including theft, vandalism and malicious mischief.

781-P-1011 Stadium Light Pole Repair and Replacement
Attachment A – Proposal Price Form

The Offeror, in compliance with the Request for Proposal having examined the Scope of Work, related documents, and the sites of the proposed work, and having full knowledge and understanding of all of the conditions surrounding the project, including the availability of materials and labor, hereby proposes to furnish all labor, materials and supplies and to complete the project at the price stated below. This price covers all expenses incurred in performing the work required.

Churchland High School

<u>Light Pole #</u>	<u>Total Price</u>
1	\$
2	\$
3	\$
4	\$
5	\$
6	\$
7	\$
8	\$
9	\$
10	\$
11	\$
12	\$
13	\$
14	\$
15	\$
16	\$

**781-P-1011 Stadium Light Pole Repair and Replacement
Attachment A – Proposal Price Form**

17	\$
18	\$
19	\$
20	\$
Total Churchland (Add 1-20)	\$

I.C. Norcom High School

1	\$
2	\$
3	\$
4	\$
Total I.C. Norcom (Add 1-4)	\$

Total Churchland and I.C. Norcom	\$
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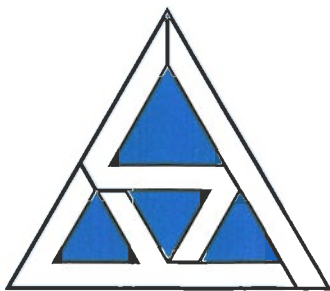
(Company Name)

(Signature)

(Printed Name and Title)

(Business Address)

(Phone and Fax Number)



**STROUD, PENCE &
ASSOCIATES, LTD.**

Structural Engineers

Roger G. Stroud, P.E.
Edward W. Pence, Jr., P.E.
David W. Mykins, P.E.
John H. Hancock, P.E.
Earl H. Inge, Jr., P.E.
Jeffrey R. Morrison, P.E.

Wayne E. Beckingham, P.E.
Antolin C. Dela Cruz, Jr.
Karen M. Tasch, CPSM

Benjamin R. Walker, P.E.
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Virginia Beach, Virginia
Glen Allen, Virginia
Raleigh, North Carolina

www.stroudpence.com

July 22, 2010

Nita Mensia
Portsmouth Public Schools
3920 Burton's Point Rd.
Portsmouth, VA 23704

Re: Churchland High School - Baseball and Football Light Poles
SPA Project No: V10.066.1

Dear Ms. Mensia,

Pursuant to your authorization, Stroud, Pence & Associates (SPA) has completed our investigation of the twenty high level light poles at the above referenced location.

The objective of this investigation was to provide a conditions survey of the four steel and sixteen wood poles at this location. This review was limited in scope and was conducted to the extent necessary to render an opinion as to the general structural condition of the poles. The following is a summary of our findings, conclusions and recommendations.

Introduction and Overview

Stroud, Pence & Associates (SPA) is aware of a local steel light pole failure at Norview High School in Norfolk of a 100 foot football light pole manufactured by Whitco Company LP (Whitco LP). It is our understanding that a Consumer Alert regarding similar light pole failures was received on September 2, 2009 by the Norfolk Public School system and that on September 3, 2009, the light pole on the Southeast side of the football field fell.

The U. S. Consumer Product Safety Commission issued a general alert on April 21, 2009 for Whitco LP poles installed between 2000 and 2006 (Appendix 'A'). The alert indicated that 9 incidents had been confirmed where these type of poles had fallen after cracks had developed in the base metal at the base of the pole. The following is a timeline of pole failures around the country as published by the *Dallas Morning News Research* and *Austin American-Statesman* (Appendix 'B'):

- In October 2005, two poles fell at Northern State University in Aberdeen, South Dakota.

- In February 2007, a light pole at Worcester Technical High School in Massachusetts fell. It was only a year old.
- In April 2007, a 90 foot pole fell at Applebee's Park in Lexington, Kentucky.
- In December 2008, a 70 foot pole came down on the Midlothian school district's football field in Texas.
- Also in December 2008, Round Rock ISD athletic complex in Texas had a pole fall.
- In March 2009, a 125 foot light pole toppled into the Hays High School gymnasium during a soccer game. This was also in Texas.
- In April 2009, a 75 foot light pole fell during school hours at the Sanger school districts baseball field in Texas. The next day a 90 foot light pole fell at an adjacent football field.
- Also in April 2009, a pole fell in Pennsylvania at Uniontown High School during moderate storm winds.

In addition to these pole failures, nearly 50 other poles have been taken down around the country after inspection revealed fractures and/ or cracks at the top of the weld that connects the pole to the base plate.

Several previous structural investigations into the causes of these failures have lead to the conclusion that fatigue cracking initiated at the toe of the base plate fillet welds led to the failures. They also concluded that the cracks appear to be a result of improper fatigue design by the manufacturer at the toe of the pole-to-base plate weld.

The twenty poles at the Churchland High School football and baseball fields consist of four steel and sixteen wood poles. The manufacturer of the steel poles could not be identified, but some of the wood poles were manufactured by "The OESER Co." in Bellingham, WA. Copies of the design drawings for these poles could not be located at the Department of Operations building.

Field Investigation and Testing

SPA visited the site to observe and document the existing condition of the twenty poles; see site plan in Appendix 'C'. Visual observations were limited to the exterior of the poles and

concentrated on the base of the poles. Field measurements of the pole circumferences indicated that there were several types of wood poles; however, the steel poles had a consistent diameter.

The steel poles at this site have slotted base plates and have been grouted below the base plate. A failure at the pole-to-base plate weld, similar to the failure in the Whitco LP poles, was possible and non-destructive testing was required by the contract. Visual observation did not reveal any linear cracks.

A non-destructive Magnetic Particle (MP) test was conducted on all four of the poles on July 20, 2010 by Froehling and Robertson, Inc. (F&R) in an effort to determine if any cracks were present in the pole bases. The complete field report for F&R is attached in Appendix 'D'.

The conditions survey consisted of a visual observation of the entire pole from the ground with an emphasis on the condition at the hand hole, the base of the pole, and the surface of the pole for abrasion, cracks, and section loss. In addition, pole plumbness over a four foot height, the condition of the climbing devices, and light winching systems were observed.

Observations and Findings

Steel Poles

The MP testing did not reveal any crack indications in the pole-to-base plate weld on any of the poles tested.

Based on visual observations, it appears that the pole shaft passes through the base plate. The shaft is then welded continuously around the circumference of the shaft at two locations creating an AASHTO Type E' connection. Type E' connections are more prone to fatigue failure than other base plate connections due to the stress concentration directly above the top weld.

The base plates had slotted holes that had a portion that extended to the exterior of the plate. In addition, two of the poles had grout under the base plate that was beginning to spall. Several sections had not spalled off fully, but only had minor attachment remaining.

Minor surface abrasions were observed on the poles. These abrasions appeared to be shallow and did not reduce the structural section or fully remove the galvanized layers. On the inside of two

of the poles there were also indications of rust on the base plate near the grout pad.

On one of the poles, rust stains were present near exterior conduit. Due to the height of the source, it could not be visually determined if the rust was occurring only in the conduit or if the pole was also rusting.

The steel poles ranged from 1/32 of an inch up to 9/16 of an inch out-of-plumb over a four foot section.

Wood Poles

The wood poles were directly buried in the ground and had indications of above ground incised preservative and a tar moisture protection for the underground portion. It also appeared, based on wood type and manufacturer identifications, that the light poles for the two baseball fields were added at different times. However, this could not be independently verified.

The wood poles exhibited standard wood characteristics for similar sized members. The poles typically had vertical checks that ranged in depth from 1/4 of an inch up to 4 1/2 inch and had varying lengths. A few of the poles had minor shakes near the base of the pole. Checks are cracks perpendicular to the growth rings and shakes are cracks within a single growth ring. Neither of these necessarily affects structural capacity.

One of the poles had a large birds nest on the top of the top light support bar. Similarly, pole number 17 had two deep holes that appeared to be located where hand holds had been. The lower hole was eight inches deep and a higher hole was 4 inches deep. The lower hole appeared to have a bird that was living in it.

In addition, most of the wood poles were not straight over their entire height, but had locations where the pole would skew. The location of the skews was not consistent between poles.

The wood poles ranged from 1/16 of an inch up to 3 1/8 of an inch out-of-plumb over a four foot section near the base.

The full conditions survey results are shown in Appendix 'E'. Photographs of the poles are attached in Appendix 'F'.

Conclusion

Steel Poles

Based on the MP testing, the pole shaft and pole-to-base plate weld do not have any cracks. Fatigue cracks similar to those present in the Whitco LP pole failures should show up at either of these two locations. Since there are no cracks at these locations, it appears that the pole design has been adequate to resist the fatigue load.

The slotted holes in the base plate would reduce the shear capacity at the base. Without performing an analysis, it is assumed that this was taken into account in the original design and the base is properly sized.

The grout under the base plate may be spalling due to a design error, mixing issue, or environmental condition. Based on the fact that the spalling is only present on half of the poles, it is our opinion that it is not caused by a design error.

The minor surface abrasions on the steel poles appear to have been caused during the erection of the poles. It appears that the hoisting strap caused the damage when the pole slipped past it. While not fully visible, the rust stain on pole 2 is most likely caused by the conduit rusting only rather than the galvanized pole rusting.

The steel poles appear to fall within the allowable limits for out-of-plumbness (dead load deflection) based on the AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals - 5th Edition 2009". The allowable tolerance is 1.2 inch per 4 feet ($h/40$) which is more than the actual worst case of 0.563 inch per 4 feet ($h/85$).

Wood Poles

All of the wood poles had checks that ranged in depth. The checks present on the poles do not at this time appear to be a structural issue due to their orientation. If these checks were oriented in a horizontal direction, it may have been an indication that the poles were overstressed/ fatigued at some point. The vertical checks are most likely caused by changes in moisture content of the wood since their production and are typical in this type of pole.

The section loss at the base of a few poles does not appear to cause a structural issue, but further analysis or investigation would be required. The larger holes on pole number 17 do appear to

remove a significant amount of structural section and should be repaired.

The birds nest at the top of one pole will increase the wind surface area, and cause an increase to the loads on the pole. This may still fall within the allowable design loads, but further analysis would be required.

All but five of the wood poles meet the AASHTO requirement at the base. The five extreme cases of out-of-plumbness exceed the allowable tolerance and range up to 3 1/8 inch per 4 feet (h/15).

Part of the issue with the poles is a result of the natural makeup of wood. As a natural product, there is always more variation in the final products that cannot be removed during manufacturing. With this in mind, the out-of-plumb measurements should not necessarily be a basis for acceptance or rejection and must be considered along with other factors which might affect performance.

Five of the poles had extreme out-of-plumbness values measured at the base, while others that fell within the tolerances at the base had visible skews near the top of pole. Some of these tolerance issues may be localized anomalies that do not affect the overall performance of the pole.

Recommendations

Steel Poles

The slots in the base plates should be brought to the attention of the pole manufacturers' Structural Engineer of Record to verify that the design is able to resist the entire shear load and that the connection is consistent with their design intent.

The pole with rust stains should be investigated to ensure that the rust does not originate from the pole. The pole may also need to have the rust stain cleaned up to remove the perception from the public that it is unsafe. It is recommended that the conduit is replaced or protected from corrosion.

Similarly, any pole with surface abrasions or rust at the inside of the base should be touched up with a galvanizing agent to prevent any future rust issues.

All loose grout at the base plate should be removed and replaced. The grout should have proper surface preparation and be properly repaired to ensure that the problem is fully mitigated. This would also help to indicate if any of the spalling is caused by an active issue. If an active issue is present the repair would spall off and it may be an indication of a more serious issue.

Wood Poles

The wood poles should have comprehensive photographic documentation indicating check locations and approximate dimensions. This data could be used for comparison with later inspections to indicate changes to the poles over time. This comparison would help to indicate if there are any more serious structural issues that need to be addressed.

The section loss at the base of a few of the wood poles should be brought to the attention to the Structural Engineer of Record for the poles to verify that the current structural capacity of the poles exceeds the design requirements. In addition, they should be able to provide a repair detail or recommendation for the large holes in pole number 17.

The five poles that exceed the out-of-plumbness tolerance and the poles with skews could also be addressed by the Structural Engineer of Record for the poles to verify if they need any corrective action to be brought back to the original design intention.

Consideration should be taken to prevent and remove the bird nest at the top of the light poles. This would remove the additional wind load and negate the need for verification of the design loads. While this solution corrects the structural issue, other non-structural issues may be involved with removing a bird nest depending on the type of bird. SPA cannot give guidance on these issues.

Finally, we recommend that there is development and implementation of a periodic inspection program for the poles. A maximum frequency of two years between inspections should be adequate to catch any potential problems. The weld at the base of the steel poles, the grout, and the rust locations should receive special attention. The base of the wood poles, check locations, and any repairs should receive special attention at the wood poles.

Please understand that this report represents a professional opinion based upon the results of our limited observations, and upon past experience with similar conditions. This report is not

Nita Mensia
July 22, 2010
Churchland High School - Baseball and Football Light Poles
Page 8 of 8

intended to be a complete or comprehensive study of the structure. Our study was strictly limited to visual observations as stated above and no statement is made regarding the safety or code compliance of other portions of the structure. Our work has been performed in accordance with generally accepted principles and practices of structural engineering. We cannot be responsible for any future changes in the condition of the structure. No warranty is provided, either expressed or implied.

As always, we appreciate the opportunity to provide services to you on this project. Please call if you need any further assistance.

Sincerely,
STROUD, PENCE & ASSOCIATES, LTD.



Robert S. Whitaker, E.I.T.
Staff Engineer



David W. Mykins, P.E.
Senior Vice President

rsw

Enclosure: Appendix A through Appendix F

Structural Engineers

PROJECT ENGINEER: David Mykins, P.E.

[illegible]

Appendix A



Stroud, Pence & Associates, Ltd.

Structural Engineers

5032 Rouse Drive

Suite 200

Virginia Beach, Virginia 23462

NORFOLK PUBLIC SCHOOLS

SEP 02 2009

RISK MANAGEMENT/SAFETY



August 21, 2009

CPSC ALERT

**Whitco Co. LP Stadium Light Poles Can Fall Over,
Posing Risk of Serious Injury and Death**

Attention: Stadium Light Pole Owners and Sites

WASHINGTON, D.C. – The U. S. Consumer Product Safety Commission (CPSC) is alerting the public, school officials, facilities managers, and municipal and public safety officials that outdoor steel stadium light poles manufactured by Whitco Co. LP, of Fort Worth, Texas can fracture or crack and fall over, posing a risk of serious injury and death to patrons and bystanders from being hit or crushed. To reduce the risk of injury, Whitco Co. LP outdoor steel stadium light poles should be inspected immediately.

CPSC has confirmed nine incidents in which Whitco Co. LP poles installed from about 2000 through 2006 fell. In one incident, a pole fell through the roof of a school gymnasium causing significant damage. In two incidents, a pole fell onto outdoor bleachers causing significant damage. The majority of incidents occurred in Texas, though the Whitco Co. LP poles have been installed in other states. To date, CPSC is not aware of any injuries.

CPSC has also confirmed that nearly 50 Whitco Co. LP poles that have not fallen had developed fractures and/or cracks next to the weld that joins the pole to its base plate. The fallen and cracked poles were located near or around school football stadiums and gymnasiums.

Whitco Co. LP, formerly located at 7700 Wyatt Drive in Fort Worth, is no longer in business. The poles can be found at facilities such as recreational parks and fields, schools, and outdoor stadiums. The poles are constructed of steel with a galvanized coating, and can range from about 70 to 135 feet tall, and weigh from about 1 to 4 tons.

CPSC recommends that Whitco Co. LP outdoor steel stadium light poles be inspected by a qualified professional immediately to reduce the risk of poles falling

over and crushing a patron or bystander. CPSC recommends that the areas of, and next to, all welds joining a pole to its base plate be inspected for signs of cracking, fractures, or deterioration. Visual examination with the naked eye or with a magnifier will not sufficiently determine the extent of fracturing or cracking. If any of these conditions are found, immediately have the affected poles repaired or replaced by a qualified professional.

CPSC is conducting an investigation concerning these poles and other outdoor steel stadium light poles that may pose a similar concern. CPSC recommends that all outdoor steel stadium light poles be routinely inspected.

The Commission voted, using its new authorities in the Consumer Product Safety Improvement Act, to release this warning upon making a finding that the health and safety of the public requires immediate notice.

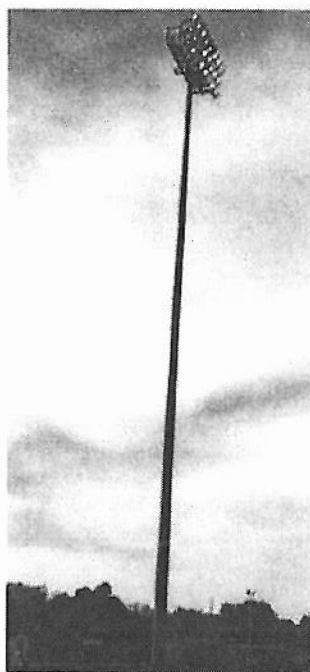
If you have information or questions regarding this warning, contact Valery Ceasar, Senior Compliance Officer/Team Lead at (301) 504-7605 or by email at vceasar@cpsc.gov. Please address your written correspondence to Ms. Ceasar at the following address:

Valery V. Ceasar
Senior Compliance Officer/Team Lead
U.S. Consumer Product Safety Commission
Office of Compliance and Field Operations
Recalls and Compliance Division
Mechanical Hazards Team
4330 East West Highway, Room 613B
Bethesda, Maryland 20814
Phone: (301) 504-7605
Fax: (301) 504-0359

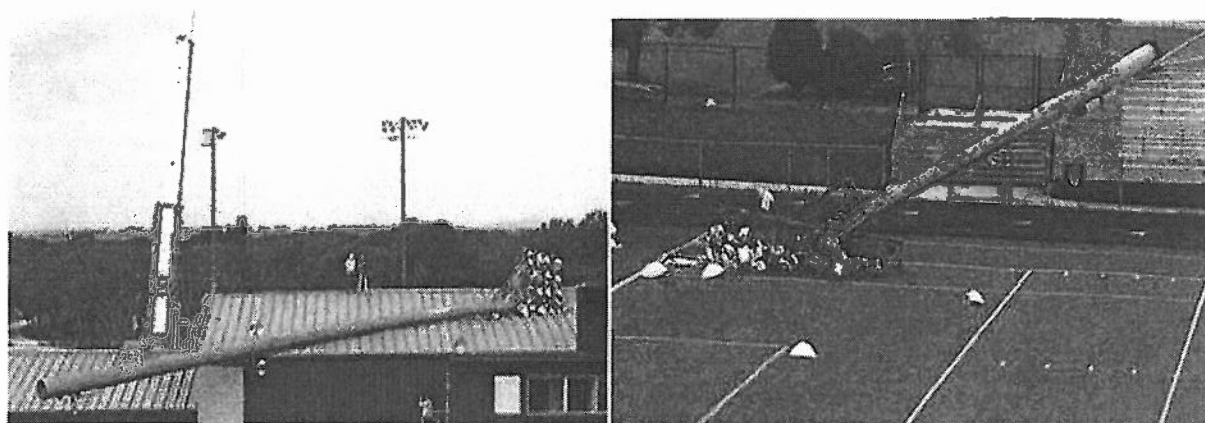
Sincerely,

A handwritten signature in black ink, appearing to read 'Marc Schoem', followed by a long horizontal line extending to the right.

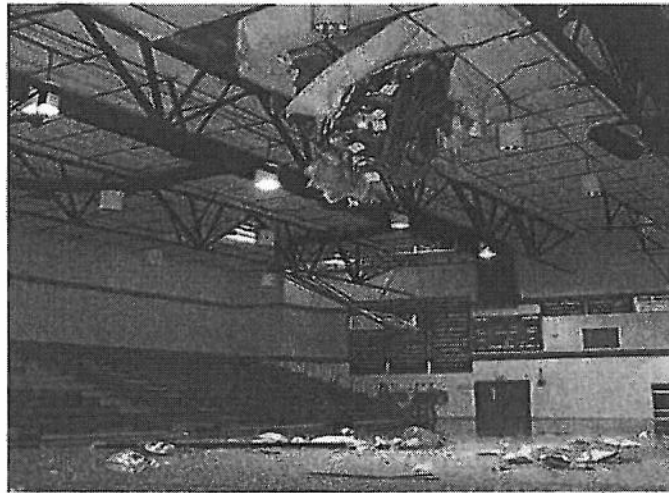
Marc Schoem
Deputy Director
Office of Compliance and Field Operations
U.S. Consumer Product Safety Commission



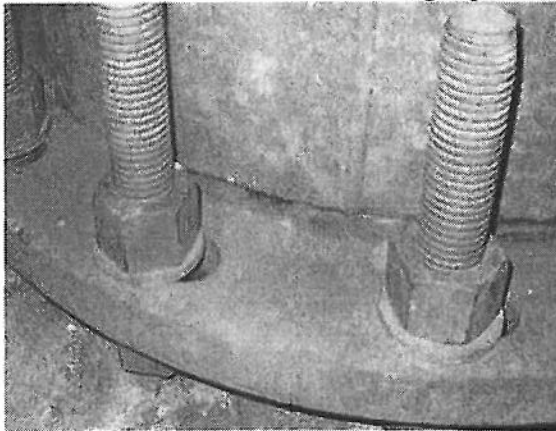
Upright stadium light pole



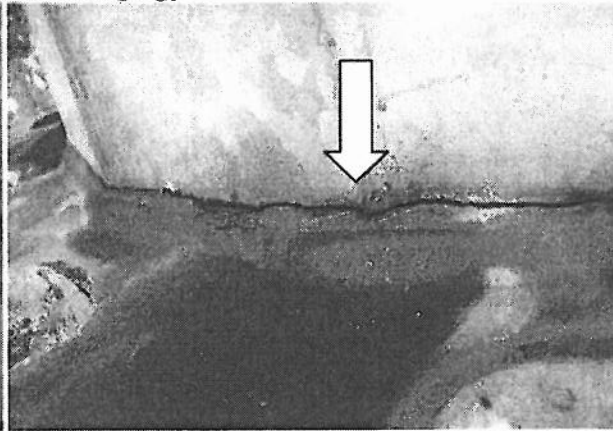
Fallen stadium light poles



Stadium light pole fallen through gymnasium roof



Base plate of stadium light pole



Close-up – crack near weld that joins the pole to its base plate

Appendix B



Stroud, Pence & Associates, Ltd.

Structural Engineers

5032 Rouse Drive

Suite 200

Virginia Beach, Virginia 23462



[Comments](#) 1 | [Recommend](#) 0

Design flaw blamed in collapse of light poles at Texas schools

09:35 AM CDT on Saturday, May 2, 2009

By MATTHEW HAAG / The Dallas Morning News
mhaag@dallasnews.com

Stadium light poles that have cracked or collapsed at schools across Texas and in other states probably weren't designed to support heavy stadium lights, structural engineers have determined.

Rows of stadium lights atop the poles, which were manufactured by now-bankrupt Fort Worth-based Whitco Co LLP, caused them to weaken and crack over several years and, in some cases, fall, engineers at Saginaw-based CHM Industries concluded.

"We do not know how many poles have been supplied by Whitco during this time frame or what percentage of their towers exhibit the same design flaw," CHM recently wrote in a letter to its clients. "What we do know is that there is a serious cause for concern in regard to installations of this nature as produced by Whitco in or around the year 2002."

The CHM engineers based those conclusions on stress tests using the specifications of a Whitco pole that fell at a Mississippi community college last year and another that crashed into a gymnasium at a school near Austin in March.

Thirteen stadium light poles sold by Whitco have fallen in recent years, the *Austin American-Statesman* reported last week. Two poles fell in early April in Sanger ISD near Denton. Last week, an 80-foot pole crashed onto an empty high school football field during a storm in Uniontown, Pa.

No one has been hurt or killed by the collapsed poles, which can reach 130 feet high and weigh up to 7,000 pounds.

The spate of collapses led the U.S. Consumer Product Safety Commission, a federal entity that usually inspects products such as cribs and toys, to announce last week that it's investigating the collapses. The commission could issue a recall.

"We take these incidents seriously," said spokeswoman Sonia Hayes-Pleasant.

The number of school districts reporting defective light poles has grown as word has spread in recent weeks. Carroll ISD in Southlake, Garland ISD and other area school districts removed cracked poles from their stadiums in early April. Reinforcements were placed on the eight poles at the Dr Pepper Ballpark in Frisco.

Last month, Wylie ISD workers assigned to replace lights at Pirate Stadium spotted cracks in two of the stadium's four 100-foot poles. Steel collars were welded to those bases to reinforce them until they can be replaced after the school year.

"Fortunately, our maintenance people noticed there was a problem," district spokeswoman Susan Daucus said. "Now we have someone monitoring them daily."

The district's insurance doesn't cover the damaged poles, and replacement lights poles and stadium lights are expected to cost \$220,000, Daucus said. Because Whitco is bankrupt, most school districts won't be able to recoup the replacement costs.

Wylie ISD considered several companies that submitted bids for light poles at Pirate Stadium, which opened in 2003. District trustees approved the lowest offer: Whitco's.

Wylie ISD's construction manager, Jerry Gallagher, who recommended Whitco as the provider, said the company had an excellent reputation back then.

"They were a good company and sold lots of poles," Gallagher said. "Nobody knew anything was wrong with Whitco poles at the time."

Whitco had purchased large steel tubes from a company in Mexico, the *American-Statesman* reported. Then, according to Whitco's standards, Makers Co. Inc. of Fort Worth manufactured the tubes into light poles. Whitco started to create its own poles sometime in 2005.

No one knows how many defective Whitco poles may have been installed across the country. The company is gone, and no one has been able to reproduce a list of customers. But Whitco possibly sold hundreds of poles after the company changed ownership in 2001.

The first reports of faulty poles emerged in early 2007, when school districts and a minor-league baseball team in Kentucky noticed cracks in poles. Later that year, a parent walking around the baseball field at Rockwall Heath High School found a crack in a pole. The district then removed 11 poles that had visible hairline cracks.

Concerns about the defective poles recently escalated after a construction industry association that markets to school districts spread an alert. No government agency regulates the light pole industry, so no widespread, organized effort has been made to alert owners of Whitco poles.

The Texas Education Agency last week urged school districts to inspect their light poles immediately. But the TEA doesn't set standards for light pole construction at schools. In comparison, light poles placed along highways in Texas must meet TxDOT standards.

Dr. Stathis Meletis, a structural engineer professor at the University of Texas at Arlington, said the Whitco accidents might have been prevented if any government agency regulated steel quality.

"The steel is not checked for quality control," he said "It's not right. I guess if accidents happen, it will change eventually."

TIMELINE: FALLING STADIUM POLES

At least 80 defective poles sold by Whitco Co. LLP have been removed because of serious cracks. The following list documents some of the instances in which the poles collapsed:

Oct. 2005, Aberdeen, S.D.: A pole fell at a Northern State University athletic field.

Feb. 2007, Worcester, Mass.: A recently installed pole fell at a field at Worcester Technical High School.

April 2007, Lexington, Ky.: A 90-foot pole fell at Applebee's Park, where the Lexington Legends, a minor league baseball team, played.

2008 December, Midlothian: A 70-foot pole collapsed on a football field.

2008 December, Round Rock: A pole fell at a Round Rock ISD athletic complex.

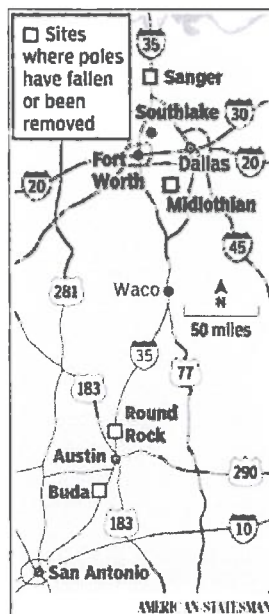
2009 March, Buda, Texas: A pole crashed into an empty gymnasium at Hays High School near Austin.

2009 April, Sanger: Two poles fell on consecutive days at Sanger ISD's athletic complex.

2009 April, Uniontown, Pa.: An 80-foot pole fell on Uniontown High School's football field during a storm.

SOURCES: Dallas Morning News research; Austin American-Statesman

ATTACHMENT B



Rodolfo Gonzalez
AMERICAN-STATESMAN

(enlarge photo)

Cracks were found in three light poles removed from Bob Shelton Stadium after the initial fall. Since news of the pole failure spread, some school districts have said they will start checking poles regularly.



Rodolfo Gonzalez
AMERICAN-STATESMAN

(enlarge photo)

People gathered at Bob Shelton Stadium in Buda last month for a girls junior varsity soccer game had an up-close view after a 125-foot lighting pole fell onto the Hays High School gym. No one was hurt. An analysis of the incident concluded that wind-related vibration was responsible for weakening the metal.



Rodolfo Gonzalez
AMERICAN-STATESMAN

(enlarge photo)

An analysis of the fallen pole in the Hays school district said that it was too narrow for its height and the weight of the lights that it held. The report also criticized the welding.

PUBLIC SAFETY

Eight light poles nationwide have fallen recently

Some engineers say faulty engineering may be at least partly to blame in two Central Texas incidents.

By Eric Dexheimer, Andrea Lorenz
AMERICAN-STATESMAN STAFF

Sunday, April 12, 2009

On April 1, a maintenance worker was on the Sanger school district's baseball field when he heard a loud crash nearby. One of the 75-foot stadium light poles had pitched to the ground, shattering the giant lights.

Sanger students were in class at the time, and no one was hurt, said Jack Biggerstaff, superintendent of the district just north of Denton. The next afternoon, as a worker was removing wires from the fallen post, a 90-foot light pole toppled to the ground by the adjacent football field, missing the 4,000-person capacity stadium.

Large galvanized steel poles, which typically are rated to withstand 90-mph winds, should last decades before needing replacement, structural engineers say. But the Statesman has found that in seven separate incidents since 2007 — and six times in the past six months — eight large athletic lighting poles towering over public school facilities made and sold by the same Texas companies have crashed down within a few years of being installed.

Because the manufacture, installation and inspection of the huge poles are unregulated, even when they are in publicly owned facilities, word of the failures has been slow to spread. Two of the accidents occurred outside of the state, in South Dakota and Massachusetts. The remainder have been in Texas.

No one has been injured. But school district officials say that's just luck. On March 6, a 125-foot pole at the Hays school district's Bob Shelton Stadium toppled and slammed onto a high school gymnasium. At least 60 people were in the stadium at the time, waiting to watch a soccer game. The gym was empty.

There's no consensus among engineers on why the poles are falling. But structural analyses of several of the failures suggest that faulty design and poor construction may be at least partly to blame.

In each of the incidents, the poles share a common lineage: A Fort Worth broker, **Whitco Co. LLP**, purchased the huge tubes from a Mexican company called Grupo Polesa. Another company, Makers Co. Inc. of Fort Worth, turned the steel tubes into light poles according to Whitco's specifications, former Whitco company executives said. Sometime in 2005, Whitco began fabricating its own poles, they said.

Dennis Depenbusch, a Kansas-based investor who ran Whitco from 2000 through 2006, said last week that he hadn't heard about the company's fallen poles and that he couldn't think of any reason products that Whitco sold during that period would suddenly start to fail.

Greg Haskin, president of the family-owned Makers, did not return detailed phone messages left with a secretary at his office. Executives for TransAmerican Power Products Inc., the Houston-based branch of Grupo, also did not respond to attempts to contact them.

Whitco's name was on the bills of lading and the product warranties. At the time that it sold the now-falling poles, however, Whitco was undergoing a corporate upheaval. Started as a family-run business in 1969, Whitco was sold in 2000 to a group of out-of-state investors. But the new owners struggled with high debt and steel prices, Depenbusch said, and six years later, the company declared bankruptcy. (Another investment group purchased the Whitco name in 2006. Although the new company is also named Whitco and sells light poles, it is an unrelated entity.)

The company's dissolution means that school districts have been unable to pursue liability claims against it; many are out tens of thousands of dollars. Large poles alone cost about \$8,000, and costs soar when lights are added.

After a 70-foot Whitco pole on the football field in the Midlothian school district crashed down in December, the district discovered cracks in three other poles. Officials said they spent \$70,000 replacing the four poles and lights.

"We're like all the other schools in this state," construction director David Boswell said. "Nobody ever thought twice about poles falling."

Potentially worse is that because the company no longer exists, none of its previous owners has sent school districts any official notification of the pole failures. The current Whitco has no records because owners bought only the name.

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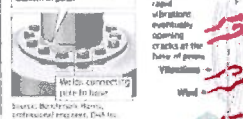
Mechanical Engineers
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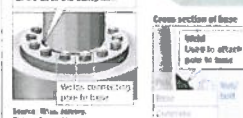
Theories on pole failure

Engineers rate failures as follows: 1. defective light poles, sold by Whitco; 2. poor installation, including problems with welding and metal fatigue associated with improper support arm.

Hays High School: Whitco stadium lighting poles sold by Whitco Co. have later, including problems with welding and metal fatigue associated with improper support arm.



Round Rock athletic complex: Wind, caused metal fatigue and cracking, which led to failure at events at the baseball field.



Shelton Stadium: Whitco stadium lighting poles sold by Whitco Co. have later, including problems with welding and metal fatigue associated with improper support arm.

(enlarge photo)

MORE ON THIS STORY

- After reported pole failures, area districts take precautions
- Report on all poles in Hays district (pdf)
- Engineering report from Round Rock (pdf)
- Detailed report on Shelton Stadium (pdf)

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The U.S. Consumer Product Safety Commission can investigate and recall products based on complaints submitted to the agency or news reports on a problem. Spokeswoman Kathleen Reilly said the commission has not had a complaint about Whitco.

As the news of falling light posts has filtered out to schools by word of mouth, more distressed poles have turned up. Last week, an inspection by football powerhouse Southlake Carroll, near Dallas, revealed cracks on the bases of three of four Whitco-sold poles at Dragon Stadium, district spokeswoman Lauren Becera said. Engineers were evaluating whether to remove them.

When it was in business, Whitco sold a couple of hundred large stadium lighting poles per year, said Tom Lach, the company's former structural engineer, who is now a Fort Worth-based lighting pole consultant. Eight fallen poles in just over two years represents a modest number of failures, he said.

Other engineers dispute that.

"These poles have a normal life span of 25 to 40 years," said Patrick Sullivan, who has been an Austin civil and structural engineer for 35 years and now specializes in forensic analysis of failed structures, including poles. "If they fall before that, that's not normal."

Although only eight poles have fallen, more have been removed because of safety concerns. When Sanger examined the remaining lighting poles at the district's athletic complex, Biggerstaff said, investigators found a 6- to 8-inch crack at the base of another pole next to the football field.

"There's no doubt that the third one was going to fall," said Chuck Galbreath, the district's athletic director. On April 3, Sanger removed all 14 of the remaining athletic lighting poles as a precaution.

As a result of similar actions at other districts, at least 40 of the Whitco/Makers poles have been taken down over the past two years after inspectors found troubling cracks.

athletic lighting towers, which weigh up to 3 tons, are often purchased and owned by public entities. Yet while the poles are engineered to a variety of professional standards, there is no agency or organization ensuring that those standards are being met or upheld in the manufacturing process.

Those in the business say manufacturing athletic lighting poles is not complicated.

"It's simple metal fabrication," Lach said. Yet welding a tube as thin as a quarter-inch to a base plate as thick as 2 inches or more can be tricky.

Additionally, no single agency or organization takes responsibility for maintaining and inspecting the poles once they are installed. That is left to the individual owners, who, experts said, often don't follow the manufacturer's recommendations.

Lach recommends that owners inspect their poles at least once a year for cracks and loosened nuts at the base. But, he said, "most people who buy poles think, 'OK, I've bought it and installed it. Now, we can forget about it.'"

The Texas Department of Transportation owns thousands of 40- and 50-foot highway lights and more than 600 "high mast" lights that tower 150 to 175 feet above highway intersections, said Greg Jones, who oversees lighting in TxDOT's traffic engineering section.

But, Jones said, "there's really not anything we do with the poles. Most of our maintenance has to do with lights and mechanical things."

Jones said he knows of only two incidents of falling poles in recent years, both along highways in Fort Worth. Both poles fell into the highway median amid strong winds; neither was sold by Whitco, he said.

Like TxDOT, the Austin Energy electric utility — which has no Whitco poles — does not regularly inspect its high mast poles, a spokesman said. Crews look them over when six of the 12 lights atop the pole burn out — typically every three to five years. While there, crews give the poles a visual inspection.

But pole specialists say that is insufficient for detecting potentially significant flaws.

"With galvanized steel especially, you can't see the cracks," said Larry Peel of Fort Worth-based Steel Inspectors of Texas, who is often hired to investigate failed poles. Even with magnetic and ultrasound testing, he said, detecting flaws can be difficult.

Similarly, school districts contacted by the Statesman said they did not regularly inspect the giant poles around their athletic complexes. After the publicity of the Hays stadium pole failure, several districts said they would begin regular checks.

Engineers cite different reasons that Whitco poles have fallen, and former company officials said there may be no common link.

"It could be 100 different things," said Lach, including a terrible

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ATTACHMENT B

- 4 Austin post offices taken off closure list
- Punters beware, UT's been around the block
- Here's a novel idea: a tailback leading the Horns in rushing

coincidence, a bad batch of steel, a poor weld, too many lights on the poles or weather.

Two of the three in-depth forensic investigations that were done after accidents, however, cite design or workmanship flaws in the poles. None has found fault with the installations, which are contracted out by school districts.

In several cases in which a pole purchased from Whitco has fallen, according to interviews and news reports, the school districts said they suspected that weather was responsible. Yet a review of weather records for the dates on which the accidents occurred found that although in some instances winds were considered high — up to 40 mph in one case — speeds and gusts fell far short of the poles' stress specifications.

But Sullivan said that under the right circumstances, even very light winds can topple huge poles. In a phenomenon called "hammer vibration" that is still not completely understood by engineers, winds of 15 mph or even lower can cause a pole to vibrate extremely rapidly — like a tuning fork. Over time, the vibration can cause cracks at the base. Because the conditions under which the vibration occur are nearly impossible to predict, Lach said manufacturers' warranties usually do not cover damage caused by hammer vibration.

"Fatigue cracking [in 2006] caused by wind-induced vibrations" was responsible for toppling a 130-foot pole at the Round Rock school district's athletic complex late last year, according to a January engineering report by Wiss, Janney, Elstner Associates Inc., an Austin engineering firm. The stadium light pole at the complex on West Parmer Lane crashed into the parking lot overnight Dec. 13. Purchased from Whitco, it had been installed five years earlier.

Several days later, Round Rock district officials removed the remaining three poles at the stadium after engineers found "numerous" cracks about 2 inches in length, according to the report.

When Sullivan analyzed the Hays incident, he concluded that wind-related vibration caused the pole's metal to fatigue and ultimately break, according to his March 12 report. But he also observed that the Hays pole was too narrow for its height and the weight of the lights. The quarter-inch thickness of the metal at the base of the tube was "far less than the minimum thicknesses now recommended in the literature," he wrote in his report.

Newer poles greater than 100 feet in height are designed with a thickness of five-sixteenths of an inch, Sullivan said. For a 125-foot pole such as the one in Hays, he said, "a half-inch is more appropriate."

Sullivan also said the pole's 15⅝-inch base plate was too thin. Base plates on newer poles of its size, he said, are 21¼ inches thick.

At one time, Whitco's base plates were thicker, said James "Kip" Pritchard, who owned his family's company, then named Whitco Sales Inc., before selling it to Depenbusch and others in 2000. He said he continued to work under the company's new ownership through January 2004. Around the time that several of the failed poles were made, he said, Whitco's new owners reduced the thickness of its large athletic pole base plates.

"That sized pole with that sized base plate is not how we used to do it," he remembered thinking. "I'm not a structural engineer. But it left me scratching my head."

Sullivan also questioned the quality of the welds that were holding the bottom of the Hays pole to the base plate.

"I'd call the welding ugly," he said. "It was 'notchy'-looking," a pattern he said could lead to metal failure around it. "Somebody wasn't minding this particularly well."

Poor welding was responsible for the falling of another Whitco pole, a forensic study found. According to Pritchard and Depenbusch, Makers Co. assembled and welded poles to the base plates.

When a 90-foot pole alongside an athletic field at Worcester Technical High School in Massachusetts pitched over on a gusty afternoon in February 2007, it had been up for only a year. A visual inspection found another pole on the verge of falling; officials used a bulldozer to tip it over. Eventually, all 11 poles at the field were removed.

A follow-up investigation using magnetic particle testing revealed hidden cracks in all of them, said Paul Moosey, an assistant commissioner at the Worcester Department of Public Works.

"They were all cracking, from the manufacturing," he said.

Because the poles were fabricated around the time when Lach says Whitco began doing the work itself, it's unclear who performed the weld.

The engineering investigation concluded that poor welding of the giant pole to the base plate was to blame.

"They were overwelded," Moosey said. Because of that, he said, the metal weakened and then cracked at the base.

5



Troubles with light poles

Eight light poles sold by Whitco Co. have fallen since 2007 and 36 others have been removed, according to records obtained through the Texas Public Information Act. Here are sites where poles have fallen or cracking has occurred :

Outside of state

-In October , two poles purchased in 2005 fell at an athletic field at Northern State University in Aberdeen, S.D. University officials determined that a structural failure was to blame, and two other poles were removed.

-In 2007, a 1-year-old pole fell at a field at Worcester Technical High School in Massachusetts. Eleven other poles were removed after hidden cracks were found in all of them.

Texas

-Sanger: One pole fell April 1 and another April 2 in the Sanger school district. Both were installed in 2002. The district removed 14 other light poles as a precaution after a crack was found on a third pole.

-Buda: On March 6 , a light pole fell onto a Hays High School gymnasium in the Hays school district before a soccer game. Three other poles were taken down the next day after cracks were discovered. The poles were purchased in 2002 .

-Round Rock: A light pole at the district athletic complex fell Dec. 13. Officials removed three other poles after discovering additional cracks. All were purchased in 2003.

-Midlothian: A pole fell in that district Dec. 3. Engineers found hairline cracks on three other poles, which were then removed. Six smaller poles with a different design that also were purchased from Whitco in 2001 remain on the district's baseball field. Ultrasonic tests on those poles revealed no cracks; the district has inspected them visually each week since December.

-Southlake: The Carroll school district found cracks on three of four poles at its football stadium. The district is waiting to hear from engineers on whether the poles, purchased in 2001, can be fixed. In the meantime, the stadium has been barricaded and closed.

Source: Staff reports

edexheimer@statesman.com; 445-1774

alorenz@statesman.com;

512-392-8750

① ②
③
④ ⑤
⑥
⑦
⑧

Your Comments

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oldbuck wrote:

I bought a pole from a Skystream 3.7 Dealer that has his poles made at the same place as above,,and also am having the Hammer vibration on a daily basis! i wonder how long till this pole shows signs of stress???

Posted on 8/10/2009 3:30:00 PM

[Report Abuse](#)



Frederico wrote:

Grupo Polesa?! You have got to be kidding. Anyway, nice thoroughly investigated article -- a rarity these days, unfortunately.....Now to address

Appendix C



Stroud, Pence & Associates, Ltd.

Structural Engineers

5032 Rouse Drive

Suite 200

Virginia Beach, Virginia 23462

ATTACHMENT B



Appendix D



Stroud, Pence & Associates, Ltd.

Structural Engineers

5032 Rouse Drive

Suite 200

Virginia Beach, Virginia 23462

**FROEHLING & ROBERTSON, INC.**

Engineering • Environmental • Geotechnical

Greenbrier Commerce Park
833 Professional Place, W.
Chesapeake, Virginia 23320-3601 USA
T 757.436.1111 | F 757.436.1674

*F&R Record No. 61L-0123**F&R Report Serial No. L0123-NDT5*

July 21, 2010

REPORT OF NON-DESTRUCTIVE TESTING

Client: Stroud Pence & Associates, LTD
5032 Rouse Drive, Suite 200
Virginia Beach, VA 23462

Attn: Mr. Dan Cudney

Project: On-Call NDT Services

Date of Inspection: July 20, 2010

Inspector: Warner Rueff, CWI

As requested, a representative of Froehling & Robertson, Inc. (F&R), conducted Magnetic Particle (MT) on the weld that connects base plate light pole structures at Churchland High School. A copy of our field Daily Report was left onsite at the time of inspection. The following are our results:

- 1) MT of four base plates to pole weld was found to be acceptable. MT was performed through galvanized coating.
- 2) UT Thickness of four poles was in range .270" to .281".

ATTACHMENT B



F&R appreciates the opportunity to work with you on this project. Should you have any questions regarding this submittal, please contact our office.

Respectfully,

FROEHLING & ROBERTSON, INC.

Warner L. Rueff, CWI
Metals/NDE Services

Marving L. Farmer, P.E.
Branch Manager

amh/wlr

Distribution: 1cc: Client

F:\Projects 61L\61L-0123 (Stroud & Pence-On Call NDT Services)\61L.0123.L0123-NDT5.docx

S

Appendix E



Stroud, Pence & Associates, Ltd.

Structural Engineers

5032 Rouse Drive

Suite 200

Virginia Beach, Virginia 23462

ATTACHMENT B



**STROUD, PENCE &
ASSOCIATES, LTD.**
Structural Engineers

Virginia Beach | Glen Allen | Raleigh

Project: Portsmouth Public Schools
Prepared By: RSW
Checked By:
Subject: Churchland High School

Proj No: V10.066.1
Date: 7/21/10
Sheet No:

Lightpole Checklist

Last updated: 05/12/10

Total Number of Poles at this site: **20**

Pole #:	1	2	3	4
Material:	Steel	Steel	Steel	Steel
Pole joint:	1 joint	1 joint	1 joint	1 joint

Hand Hold (HH):

HH Fatigue:	No	No	No	No
Moisture:	No	No	No	No

Foundation:

Base Plate:	1 3/4"	1 3/4"	1 3/4"	1 3/4"
Anchor Rods:	6 - 1 5/8" rods	6 - 1 5/8" rods	6 - 1 5/8" rods	6 - 1 5/8" rods
Tightened:	Yes	Yes	Yes	Yes
Leveling Nuts:	Grout - OK	Grout - OK	Grout - Loose	Grout - OK

Pole:

Abrasion:	Minor surface	Rust stain at side of pole near conduit	Minor surface	Minor surface
Coating:	Hot Dipped Galvanized	Hot Dipped Galvanized	Hot Dipped Galvanized	Hot Dipped Galvanized
Section Loss:	No	No	No	No
Cracks:	No	No	No	No
Plumbness*:	9/16" OOP	1/32" OOP	1/8 " OOP	3/32" OOP
Climbing Devise:	Hand Holds and safety wire intact	Hand Holds and safety wire intact	Hand Holds and safety wire intact	Hand Holds and safety wire intact

Approx. Dimensions:

~Diameter:	18.5" at base	18.5" at base	18.5" at base	18.5" at base
~Wall Thickness:	0.27	0.28	0.28	0.27
~Length:				+ 88'

Lights:

Winch System:	N/A	N/A	N/A	N/A
Misc:	18 lights	18 lights	18 lights	18 lights
Speakers:	No	2 speakers	No	No

N.D.T. (F&R):

(25% min of steel)	No Cracks Noted	No Cracks Noted	No Cracks Noted	No Cracks Noted
--------------------	-----------------	-----------------	-----------------	-----------------

Other:

Manuf:				

* Plumbness was measured using a 4'-0" long level. Pole taper has been removed from the approximate plumbness measurement shown. OOP= Out-of-Plumb
Italicized items were not required per the contract scope.

ATTACHMENT B



**STROUD, PENCE &
ASSOCIATES, LTD.**
Structural Engineers

Virginia Beach | Glen Allen | Raleigh

Project: Portsmouth Public Schools

Prepared By: RSW

Checked By:

Subject: Churchland High School

Proj No: V10.066.1

Date: 7/15/10

Sheet No:

Lightpole Checklist

Last updated: 05/12/10

Total Number of Poles at this site: 20

Pole #:	5	6	7	8
Material:	Wood	Wood	Wood	Wood
Pole joint:	No joint	No joint	No joint	No joint

Hand Hold (HH):

HH Fatigue:	N/A	N/A	N/A	N/A
Moisture:	No	No	No	No

Foundation:

Base Plate:	N/A	N/A	N/A	N/A
Anchor Rods:	N/A	N/A	N/A	N/A
Tightened:	N/A	N/A	N/A	N/A
Leveling Nuts:	N/A	N/A	N/A	N/A

Pole:

Abrasion:	Typical Timber	Typical Timber	Typical Timber	Typical Timber
Coating:	Moisture treated and incising treatment	Moisture treated and incising treatment	Moisture treated and incising treatment	Moisture treated and incising treatment
Section Loss:	No	No	Minor	No
Cracks:	Typical Timber	Typical Timber	Typical Timber	Typical Timber
Plumbness*:	1/4 " OOP	13/16" OOP	29/32" OOP	1 13/32" OOP
Climbing Device:	Hand Holds	Hand Holds	Hand Holds	Hand Holds

Approx. Dimensions:

~Diameter:	16.5"	15"	15.3"	15.6"
~Wall Thickness:	N/A	N/A	N/A	N/A
~Length:		70'		

Lights:

Winch System:	N/A	N/A	N/A	N/A
Misc:	5 lights	7 lights	4 lights	5 lights
Speakers:	No	No	No	No

N.D.T. (F&R):

(25% min of steel)	N/A	N/A	N/A	N/A
--------------------	-----	-----	-----	-----

Other:

Manuf:				

* Plumbness was measured using a 4'-0" long level. Pole taper has been removed from the approximate plumbness measurement shown. OOP= Out-of-Plumb
Italicized items were not required per the contract scope.

ATTACHMENT B



**STROUD, PENCE &
ASSOCIATES, LTD.**
Structural Engineers

Virginia Beach | Glen Allen | Raleigh

Project: Portsmouth Public Schools

Prepared By: RSW

Checked By:

Subject: Churchland High School

Proj No: V10.066.1

Date: 7/21/10

Sheet No:

Lightpole Checklist

Last updated: 05/12/10

Total Number of Poles at this site: 20

Pole #:	9	10	11	12
Material:	Wood	Wood	Wood	Wood
Pole joint:	No joint	No joint	No joint	No joint

Hand Hold (HH):

HH Fatigue:	N/A	N/A	N/A	N/A
Moisture:	No	No	No	No

Foundation:

Base Plate:	N/A	N/A	N/A (conc at base)	N/A
Anchor Rods:	N/A	N/A	N/A	N/A
Tightened:	N/A	N/A	N/A	N/A
Leveling Nuts:	N/A	N/A	N/A	N/A

Pole:

Abrasion:	Typical Timber	Typical Timber	Typical Timber	Typical Timber
Coating:	Moisture treated and incising treatment	Moisture treated and incising treatment	Moisture treated and incising treatment	Moisture treated and incising treatment
Section Loss:	At 3 locations	No	No	Minor
Cracks:	Typical Timber and 2" max deep	Typical Timber and 4 1/2" max deep	Typical Timber	Typical Timber and 4" max deep
Plumbness*:	1 3/16" OOP	13/16" OOP	1/16" OOP	11/16" OOP
Climbing Device:	Hand Holds	Hand Holds	Hand Holds	Hand Holds

Approx. Dimensions:

~Diameter:	16.4"	16.4"	16.4"	15.7"
~Wall Thickness:	N/A	N/A	N/A	N/A
~Length:				

Lights:

Winch System:	N/A	N/A	N/A	N/A
Misc:	5 lights	4 lights	7 lights	5 lights
Speakers:	No	No	No	No

N.D.T. (F&R):

(25% min of steel)	N/A	N/A	N/A	N/A
--------------------	-----	-----	-----	-----

Other:

Manuf:		The OESER Co. Bellingham, WA	The OESER Co. Bellingham, WA
Pole info:		1991 2 85 DFPO S	1992 2 85 DFPO S
Notes:		Bird nest near top of pole	

* Plumbness was measured using a 4'-0" long level. Pole taper has been removed from the approximate plumbness measurement shown. OOP= Out-of-Plumb
Italicized items were not required per the contract scope.

ATTACHMENT B



**STROUD, PENCE &
ASSOCIATES, LTD.**
Structural Engineers

Virginia Beach | Glen Allen | Raleigh

Project: Portsmouth Public Schools
Prepared By: RSW
Checked By: _____
Subject: Churchland High School

Proj No: V10.066.1

Date: 7/15/10

Sheet No: _____

Lightpole Checklist

Last updated: 05/12/10

Total Number of Poles at this site: **20**

Pole #:	13	14	15	16
Material:	Wood	Wood	Wood	Wood
Pole joint:	No joint	No joint	No joint	No joint

Hand Hold (HH):

HH Fatigue:	N/A	N/A	N/A	N/A
Moisture:	No	No	No	No

Foundation:

Base Plate:	N/A	N/A	N/A	N/A
Anchor Rods:	N/A	N/A	N/A	N/A
Tightened:	N/A	N/A	N/A	N/A
Leveling Nuts:	N/A	N/A	N/A	N/A

Pole:

Abrasion:	Typical Timber	Typical Timber	Typical Timber	Typical Timber
Coating:	Moisture treated and incising treatment	Moisture treated and incising treatment	Moisture treated and incising treatment	Moisture treated and incising treatment
Section Loss:	Minor	Minor	Minor and 2" south	Minor
Cracks:	Typical Timber	Typical Timber	Typical Timber and 1 1/2" max deep	Typical Timber
Plumbness*:	9/16" OOP	1 7/8 " OOP	11/16" OOP	1 3/8 " OOP
Climbing Devise:	Hand Holds	Hand Holds	Hand Holds	Hand Holds

Approx. Dimensions:

~Diameter:	14.3"	15.4"	14"	15.5"
~Wall Thickness:	N/A	N/A	N/A	N/A
~Length:		61'		

Lights:

Winch System:	N/A	N/A	N/A	N/A
Misc:	5 lights	7 lights	4 lights	4 lights
Speakers:	No	No	No	No

N.D.T. (F&R):

(25% min of steel)	N/A	N/A	N/A	N/A
--------------------	-----	-----	-----	-----

Other:

Manuf:				
Notes:			Sharp OOP at top	Sharp OOP at top
			Vertical cracks begin to spiral at top	

* Plumbness was measured using a 4'-0" long level. Pole taper has been removed from the approximate plumbness measurement shown. OOP= Out-of-Plumb
Italicized items were not required per the contract scope.

ATTACHMENT B



**STROUD, PENCE &
ASSOCIATES, LTD.**
Structural Engineers

Virginia Beach | Glen Allen | Raleigh

Project: Portsmouth Public Schools

Prepared By: RSW

Checked By: _____

Subject: Churchland High School

Proj No: V10.066.1

Date: 7/15/10

Sheet No: _____

Lightpole Checklist

Last updated: 05/12/10

Total Number of Poles at this site: **20**

Pole #:	17	18	19	20
Material:	Wood	Wood	Wood	Wood
Pole joint:	No joint	No joint	No joint	No joint

Hand Hold (HH):

HH Fatigue:	N/A	N/A	N/A	N/A
Moisture:	No	No	No	No

Foundation:

Base Plate:	N/A (increased tar at base)	N/A	N/A	N/A
Anchor Rods:	N/A	N/A	N/A	N/A
Tightened:	N/A	N/A	N/A	N/A
Leveling Nuts:	N/A	N/A	N/A	N/A

Pole:

Abrasion:	Typical Timber	Typical Timber	Typical Timber	Typical Timber
Coating:	Moisture treated and incising treatment	Moisture treated and incising treatment	Moisture treated and incising treatment	Moisture treated and incising treatment
Section Loss:	Deep holes in side (8" deep at ~10', 4" deep at ~13')	Minor; small holes up high not from incising treatment	Minor	Minor
Cracks:	Typical Timber	Typical Timber	Typical Timber	Typical Timber
Plumbness*:	5/16" OOP	9/16" OOP	2 1/16" OOP	3 1/8" OOP
Climbing Device:	Hand Holds	Hand Holds	Hand Holds	Hand Holds

Approx. Dimensions:

~Diameter:	15" (@3' up)	14"	12.9"	13.4"
~Wall Thickness:	N/A	N/A	N/A	N/A
~Length:				

Lights:

Winch System:	N/A	N/A	N/A	N/A
Misc:	4 lights	4 lights	7 lights	5 lights
Speakers:	No	No	No	No

N.D.T. (F&R):

(25% min of steel)	N/A	N/A	N/A	N/A
--------------------	-----	-----	-----	-----

Other:

Manuf:				
Notes:	Bird nest in 8" hole			Sharp OOP at top

* Plumbness was measured using a 4'-0" long level. Pole taper has been removed from the approximate plumbness measurement shown. OOP= Out-of-Plumb
Italicized items were not required per the contract scope.

Appendix F



Stroud, Pence & Associates, Ltd.

Structural Engineers

5032 Rouse Drive

Suite 200

Virginia Beach, Virginia 23462

ATTACHMENT B



Figure 1 - A
A view of a typical High Level (Pole Type) lightpole.



Figure 1 - B
A view of a typical football lightpole with low speakers.



Figure 1 - C
A football lightpole with speakers. Rust stains are seen on side near conduit.



Figure 1 - D
Rust stains near conduit attached to the light pole.

ATTACHMENT B



Figure 2 - A
Typical pole-to-base plate welded
connection.



Figure 2 - B
No cracks at the welded connection were
visually observed.



Figure 2 - C
Typical base plate with grout pad and
slotted anchor rod holes.



Figure 2 - D
Typical anchor rod and hole.

ATTACHMENT B



Figure 3 - A
Typical hand hole on the light poles.



Figure 3 - B
Surface damage to galvanizing layer.



Figure 3 - C
Grout pad has spalled at edges.



Figure 3 - D
Spalled and cracked grout pad.

ATTACHMENT B



Figure 4 - A
Potential rust or rust stains mid height of pole near hand holds.



Figure 4 - B
Potential rust or rust stains inside the pole at the base plate.



Figure 4 - C
A non-destructive Magnetic Particle (MP) test. All four poles were tested.



Figure 4 - D
The inside of a pole showing the pole connection with the base plate.

ATTACHMENT B



Figure 5 - A
A view of a typical wood baseball lightpole.



Figure 5 - B
Typical light package at the top of the wood baseball poles.



Figure 5 - C
Manufacturer's information tag on some of the wood poles.



Figure 5 - D
Typical wood pole foundation. Poles are treated and directly buried in the ground.

ATTACHMENT B



Figure 6 - A
Pole with electrical,etc. wires that lead to light poles. Pole not included in contract.



Figure 6 - B
Lightpole with noticable out-of-plumb change near mid height.



Figure 6 - C
Lightpole with birds nest at the light kit.



Figure 6 - D
Birds nest is sitting on top of the top light bar.

ATTACHMENT B



Figure 7 - A
Deep hole (8" +) in side of pole large enough to hold a bird.



Figure 7 - B
Vertical 5"+ check in wood pole. Checks are splits that cross the growth rings.



Figure 7 - C
Vertical checks. Moisture and incising treatment is indicated by the small holes.



Figure 7 - D
Vertical checks. Moisture and incising treatment is indicated by the small holes.

ATTACHMENT B



Figure 8 - A
Some section loss on two sides of the pole.



Figure 8 - B
Typical small surface checks.



Figure 8 - C
Vertical checks near the pole hand holds.



Figure 8 - D
Typical pole with out-of-plumb variations over total height.

ATTACHMENT B



Figure 9 - A
Small holes on upper half of pole not caused by incising treatment.



Figure 9 - B
Vertical checks. Tar moisture treatment is visible at the base.



Figure 9 - C
Vertical checks near mid height of pole.



Figure 9 - D
Distinct out-of-plumb transition near top of pole.

July 16, 2010

Nita Mensia / Director of Operations
Portsmouth Public Schools
801 Crawford St.
Portsmouth, VA 23704

Re: I. C. Norcom High School - Concrete Football Light Poles
SPA Project No: V10.066.2

Dear Ms. Mensia,

Pursuant to your authorization, Stroud, Pence & Associates (SPA) has completed our investigation of the four high level light poles at the above referenced location.

The objective of this investigation was to provide a conditions survey of the four concrete poles at the football stadium. This review was limited in scope and was conducted to the extent necessary to render an opinion as to the general structural condition of the poles. The following is a summary of our findings, conclusions and recommendations.

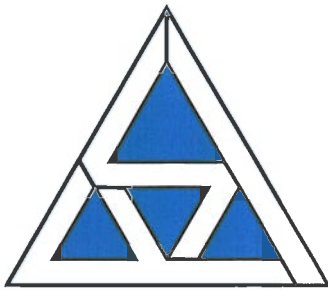
Introduction and Overview

The four poles at the I. C. Norcom football fields consist of concrete poles manufactured by "Bay Shore" in Cape Charles VA. Copies of select portions of the construction documents for the project are attached in Appendix 'A'. The original drawings were located at the Department of Operations building.

Field Investigation and Testing

SPA visited the site to observe and document the existing condition of the four poles; see site plan in Appendix 'B'. Visual observations were limited to the exterior of the poles and concentrated on the base of the poles. Plates located on the poles and field measurements of the pole circumferences, revealed that there were two types of poles.

The poles at this site did not have base plates, but according to the original construction documents are continuous poles embedded in the ground. Since the poles are concrete non-destructive testing was not required by the contract.



**STROUD, PENCE &
ASSOCIATES, LTD.**

Structural Engineers

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Edward W. Pence, Jr., P.E.
David W. Mykins, P.E.
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The conditions survey consisted of a visual observation of the entire pole from the ground with an emphasis on the condition at the hand hole, the base of the pole, and the surface of the pole for abrasion, cracks, and section loss. In addition, pole plumbness over a four foot height, the condition of the climbing devices, and light winching systems were observed.

Observations and Findings

The visual observations revealed relatively narrow shallow cracks on three of the four poles near the hand hold access panels. In addition, these three poles had longer vertical cracks at or near where the edges of the forms were located during production.

Several of these longer cracks had loose concrete on the surface, some of which had already flaked off. These areas appear to have been touched up at some point with a grout paste, which appeared to be some of the material that had fallen off. Several of the crack locations also had an efflorescence buildup.

There was no horizontal cracking visible at the critical area where the poles met the ground. There were minor surface scratches on two of the poles and the safety cable, used by personnel while climbing the pole, was broken on another pole.

The poles ranged from 1/16 of an inch up to 1/4 of an inch out-of-plumb over a four foot section.

The full conditions survey results are shown in Appendix 'C'. Photographs of the poles are attached in Appendix 'D'.

Conclusion

The shallow vertical cracks present on the three concrete poles do not at this time appear to be a structural issue due to their orientation. If these cracks were oriented in a horizontal direction, it may have been an indication that the poles were overstressed/fatigued at some point. However, the shallow vertical cracks most likely indicate that during formwork removal after production, the edges were not fully cured and became damaged.

Once this initial damage was done, the manufacturer would have patched the cracks. This appears to be the case with these poles.

Nita Mensia / Director of Operations

July 16, 2010

I. C. Norcom High School - Concrete Football Light Poles

Page 3 of 4

It also appears that they did not provide adequate surface preparations prior to patching which has caused the patch to become brittle, separate, and fall off.

Cracks in the vicinity of the hand holes are most likely the result of stress concentrations which occur at corners of openings. These types of vertical cracks are common and do not significantly affect the structural performance of the pole.

The safety cable that failed appears to have been severed after rusting and entangling on the handholds protruding from the pole.

The poles appear to fall within the allowable limits for out-of-plumbness (dead load deflection) based on the AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals - 5th Edition 2009". The allowable tolerance is 1.2 inch per 4 feet (h/40) which is more than the actual worst case of 0.25 inch per 4 feet (h/192).

Recommendations

The poles appear to have had vertical cracks that were improperly repaired. These cracks should have proper surface preparation and be properly repaired to ensure that the problem is fully mitigated. This would also help to indicate if any of the cracks are active. Active cracks would reopen after repair and may be indications of a more serious issue.

In addition, the use of the safety cable should be restricted on the three remaining cables until there is further testing to verify their capacity. Because all of the cables have rusted and one has fully failed, the cables should be considered unsafe until they are investigated, repaired, or replaced. Corrosion protection should also be added to the cables.

We further recommend that there is development and implementation of a periodic inspection program for the poles. A maximum frequency of two years between inspections should be adequate to catch any potential problems. The base of the pole and the vertical crack repair locations should receive special attention.

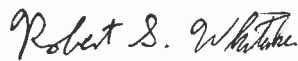
Please understand that this report represents a professional opinion based upon the results of our limited observations, and

Nita Mensia / Director of Operations
July 16, 2010
I. C. Norcom High School - Concrete Football Light Poles
Page 4 of 4

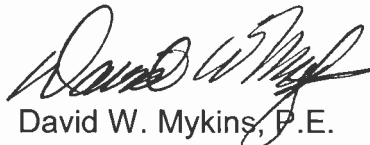
upon past experience with similar conditions. This report is not intended to be a complete or comprehensive study of the structure. Our study was strictly limited to visual observations as stated above and no statement is made regarding the safety or code compliance of other portions of the structure. Our work has been performed in accordance with generally accepted principles and practices of structural engineering. We cannot be responsible for any future changes in the condition of the structure. No warranty is provided, either expressed or implied.

As always, we appreciate the opportunity to provide services to you on this project. Please call if you need any further assistance.

Sincerely,
STROUD, PENCE & ASSOCIATES, LTD.



Robert S. Whitaker, E.I.T.
Staff Engineer



David W. Mykins, P.E.
Senior Vice President

rsw

Enclosure: Appendix A through Appendix D

Structural Engineers

PROJECT ENGINEER: David Mykins, P.E.

[illegible]

Appendix A



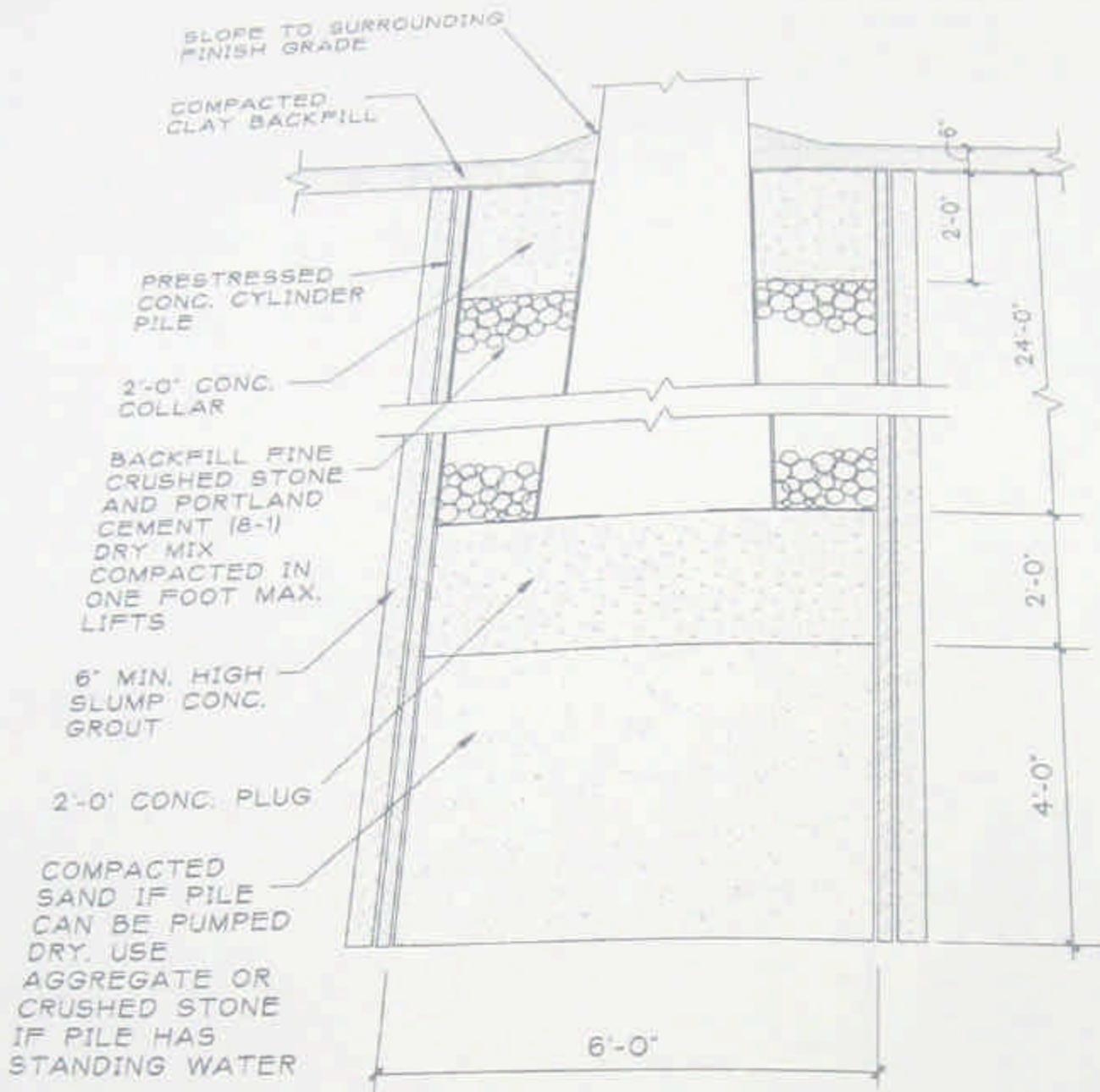
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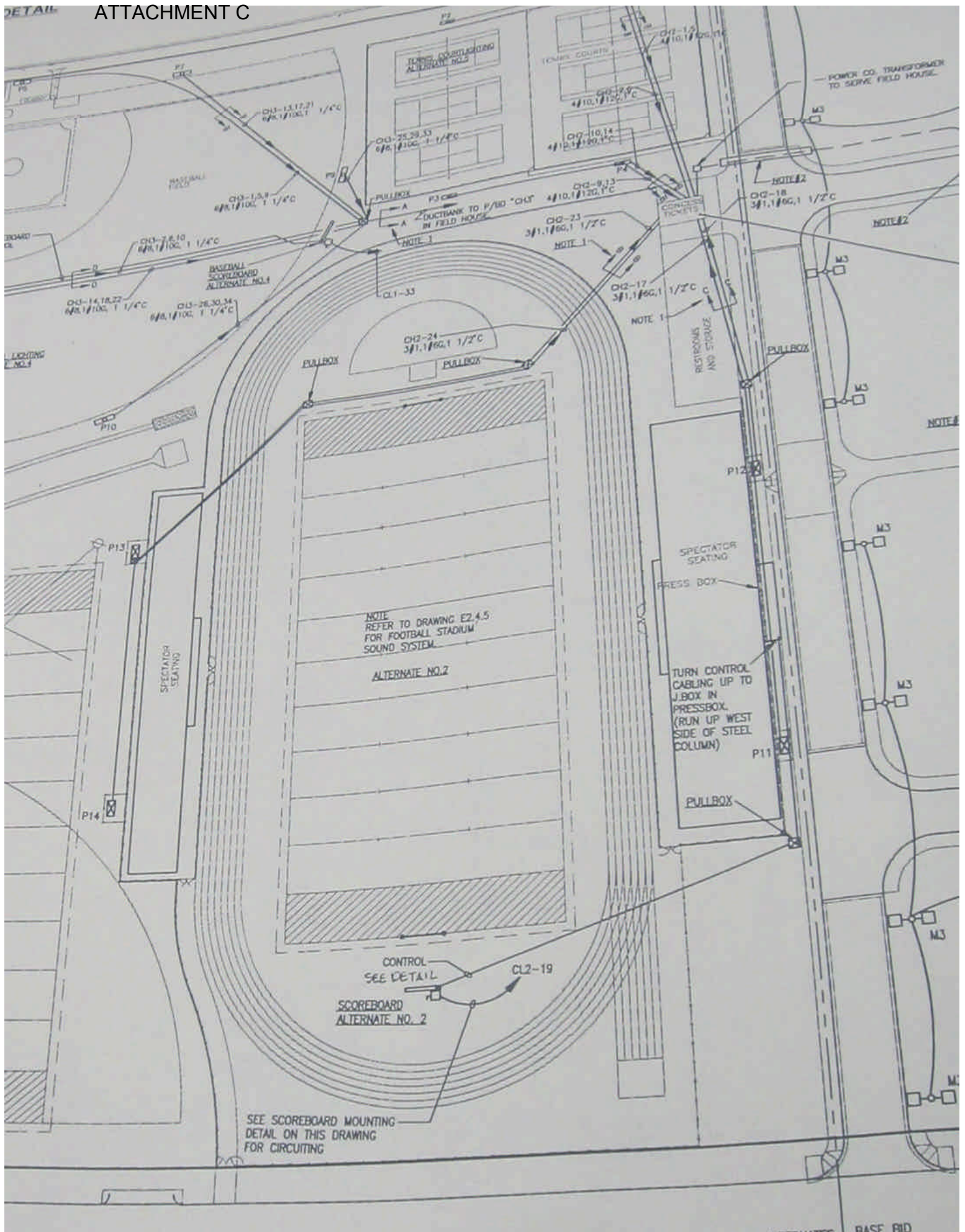
Virginia Beach, Virginia 23462

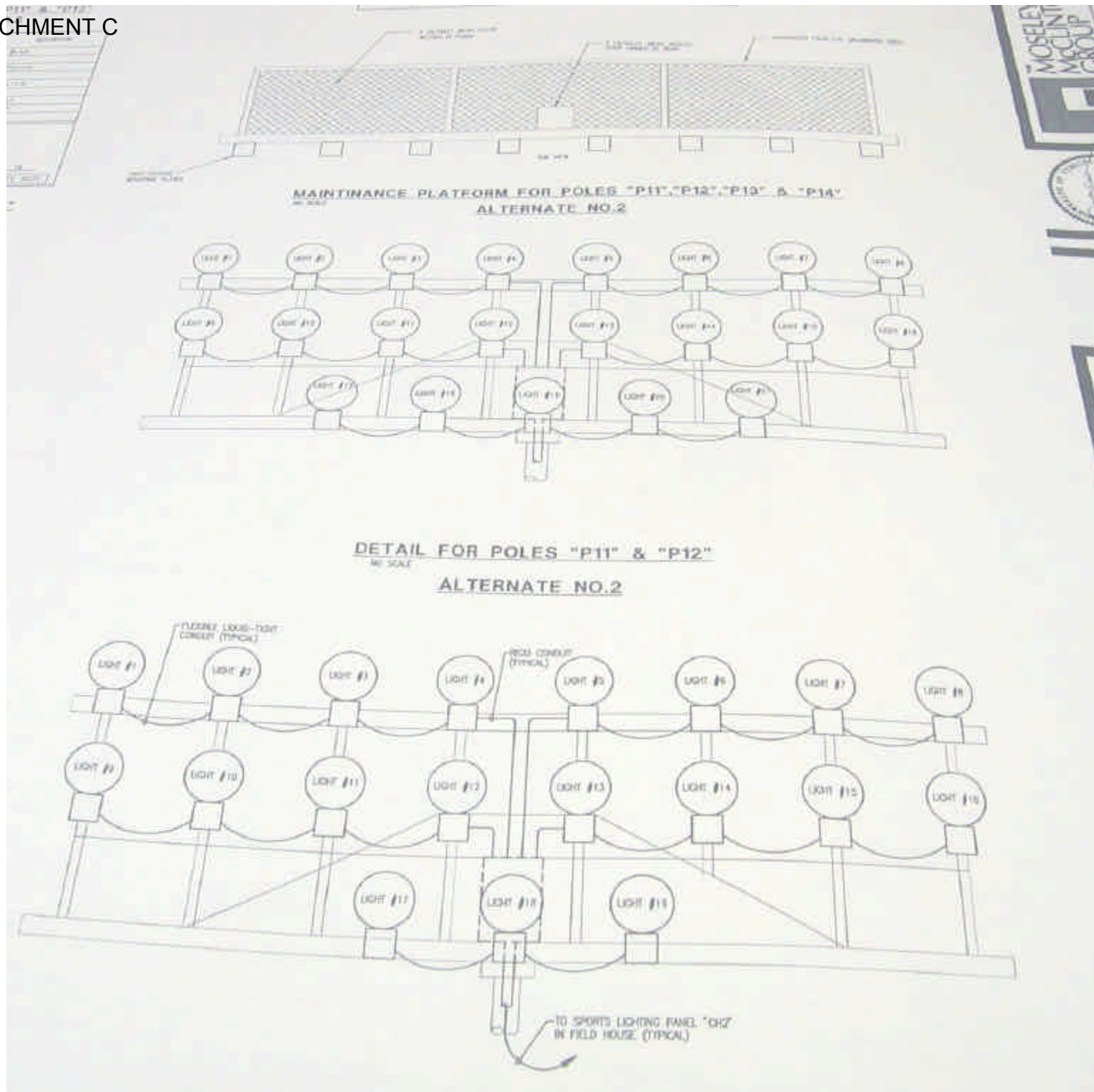


POLE MOUNTING DETAIL FOR FOOTBALL FIELD LIGHTING

3/4" = 1'-0"

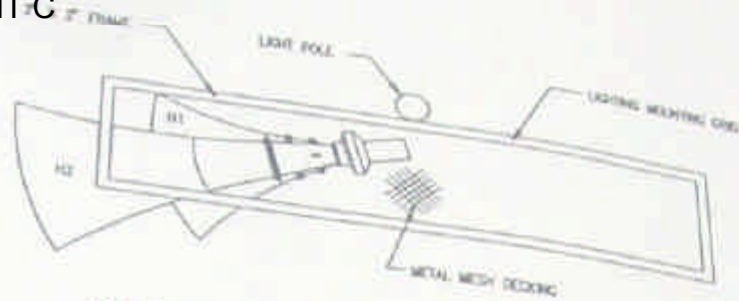
NOTE: (PART OF ALT. NO.2)



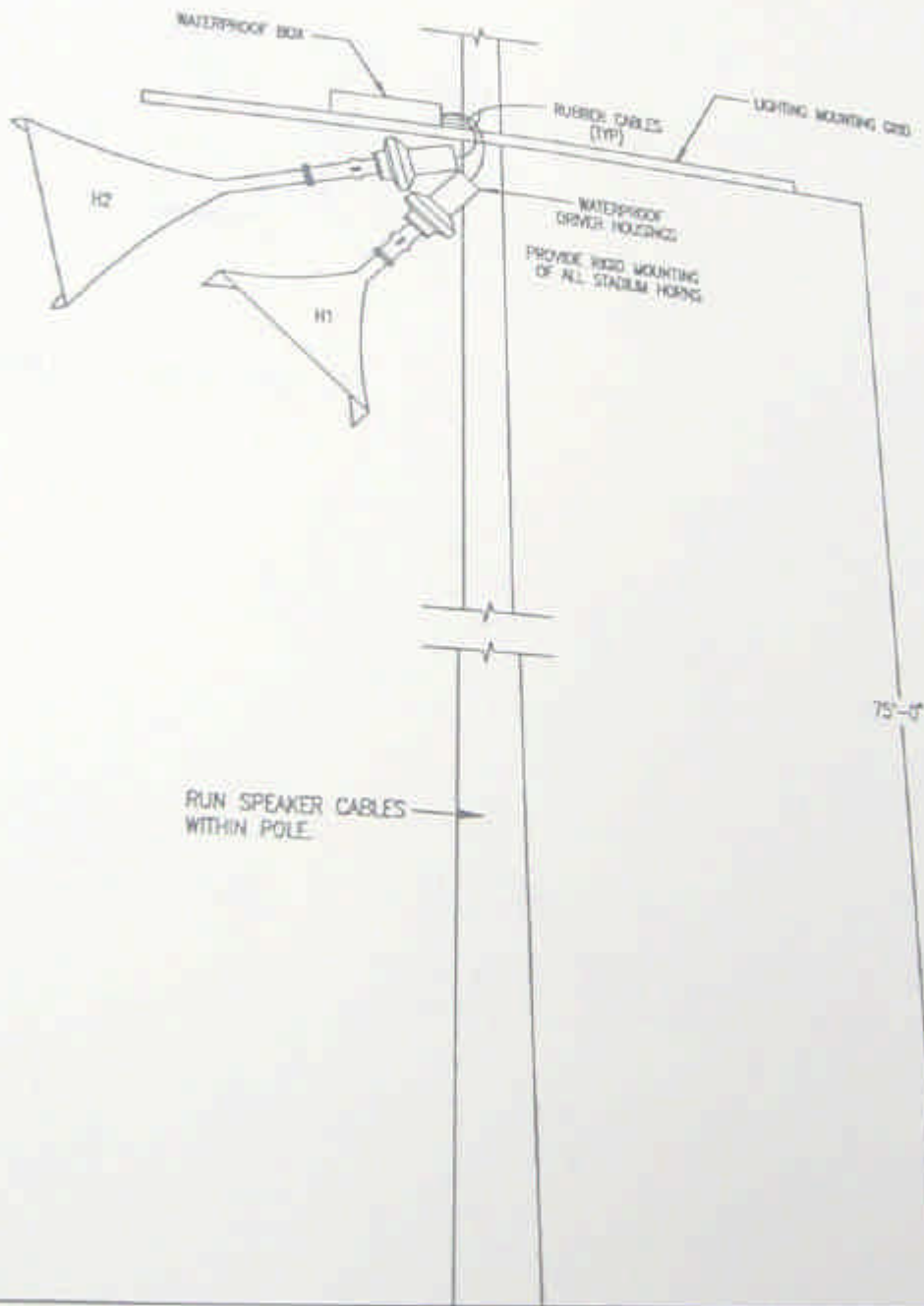


ATTACHMENT C

AREA	POLE NUMBER	POLE HEIGHT	NUMBER OF FIXTURES	NEMA TYPE	LAMP TYPE	WATTS	VOLTS	MANUFACTURER
								HUBBELL
TENNIS COURT ALTERNATE NO.5	P1,P2,P3,P4	70'	5 6	4 5	MH	1000	480	SLS-1000H-145 SLS-1000H-155
BASEBALL FIELD ALTERNATE NO.4	P5,P6	70'	4	4	MH	1500	480	SLS-1500H-145 SLS-1500H-155
	P7,P8	70'	5	5				
	P9	70'	8	4				
	P10	70'	2	5				
		70'	5	4				
FOOTBALL FIELD ALTERNATE NO.2			6	5	MH	1500	480	SLS-1500H-125 SLS-1500H-135
			7	4				
			5	5				
	P11,P12	95'	13	2				
	P13,P14	105'	8	3				
			15	2				
			4	3				



CLUSTER MOUNTING DETAIL - PLAN VIEW
 SCALE: $1/2" = 1'-0"$



CLUSTER MOUNTING DETAIL - ELEVATION AA
 SCALE: $1/2" = 1'-0"$

Appendix B



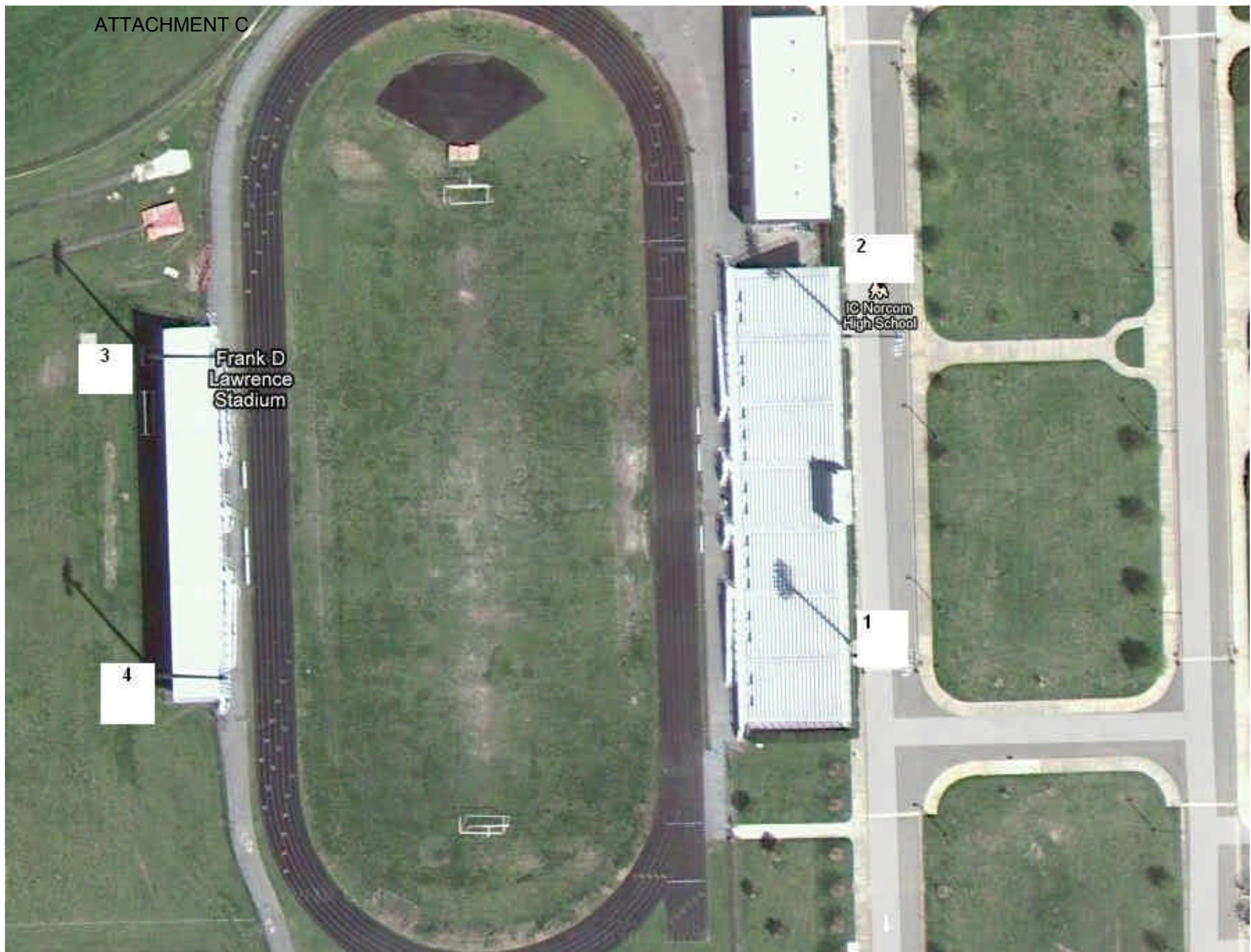
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Appendix C



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ATTACHMENT C



**STROUD, PENCE &
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Structural Engineers

Virginia Beach | Glen Allen | Raleigh

Project: Portsmouth Public Schools
Prepared By: RSW
Checked By:
Subject: I. C. Norcom High School

Proj No: V10.066.2
Date: 7/6/10
Sheet No:

Lightpole Checklist

Last updated: 05/12/10

Total Number of Poles at this site: **4**

Pole #:	1	2	3	4
Material:	Concrete	Concrete	Concrete	Concrete
Pole joint:	None	None	None	None

Hand Hold (HH):

HH Fatigue:	No	Crack in lower right	Crack in top right	Crack in top right
Moisture:	No	No	No	No

Foundation:

Base Plate:	N/A	N/A	N/A	N/A
Anchor Rods:	N/A	N/A	N/A	N/A
Tightened:	N/A	N/A	N/A	N/A
Leveling Nuts:	N/A	N/A	N/A	N/A

Pole:

Abrasion:	Minor surface	No	No	Minor Surface
Coating:	No	No	No	No
Section Loss:	Very Minor	No	No	No
Cracks:	No	Along form seam on south side	Along form seam on south and north side	Parallel to form seam on south and north side
Plumbness*:	9/16" OOP	3/8 " OOP	1/8 " OOP	1/8 " OOP
Climbing Devise:	Intact	Safety cable broken	Intact	Intact

Approx. Dimensions:

~Diameter	30.4"	30.4"	33.3"	33.3"
~Wall Thickness:	5.5" at HH			
~Length:	119'	119'	129'	129'

Lights:

Winch System:	N/A	N/A	N/A	N/A
Misc:	16 lights on 2 arms (8,8)	21 lights on 3 arms (8,8,5)	19 lights on 3 arms (8,8,3)	19 lights on 3 arms (8,8,3)
Speakers:	3 speakers	No	No	3 speakers

N.D.T. (F&R):

(25% min of steel)	N/A	N/A	N/A	N/A
--------------------	-----	-----	-----	-----

Other:

Manuf:	"Bay Shore" in Cape Charles VA	"Bay Shore" in Cape Charles VA	"Bay Shore" in Cape Charles VA	"Bay Shore" in Cape Charles VA
	Class 909	Class 909	Class 1258	Class 1258

* Plumbness was measured using a 4'-0" long level. Pole taper has been removed from the approximate plumbness measurement shown. OOP= Out-of-Plumb
Italicized items were not required per the contract scope.

Appendix D



Stroud, Pence & Associates, Ltd.

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Figure 1 - A
View of typical High-Level (Pole Type) light poles



Figure 1 - B
A view of the typical light kit.

ATTACHMENT C



Figure 2 - A
A vertical crack occurring at the top right of the hand hole.



Figure 2 - B
A vertical crack with deteriorated repair material.



Figure 2 - C
Vertical crack with efflorescence buildup.



Figure 2 - D
Rusted support for the safety cable.

ATTACHMENT C



Figure 3 - A
A shallow vertical crack at production formwork edge.



Figure 3 - B
Two vertical cracks, one at formwork edge and one parallel.



Figure 3 - C
A shallow vertical crack at formwork edge on pole 4.



Figure 3 - D
Vertical crack from top right of hand hole. Efflorescence buildup is present.



Figure 4 - A
An extensive shallow vertical crack at
formwork edge.



Figure 4 - B
Shallow vertical crack with missing repair
material.



Figure 4 - C
Loose repair material at formwork edge.



Figure 4 - D
Vertical crack from top corner of hand
hole with extensive efflorescence.

ATTACHMENT C



Figure 5 - A
Tall vertical crack at pole 3.

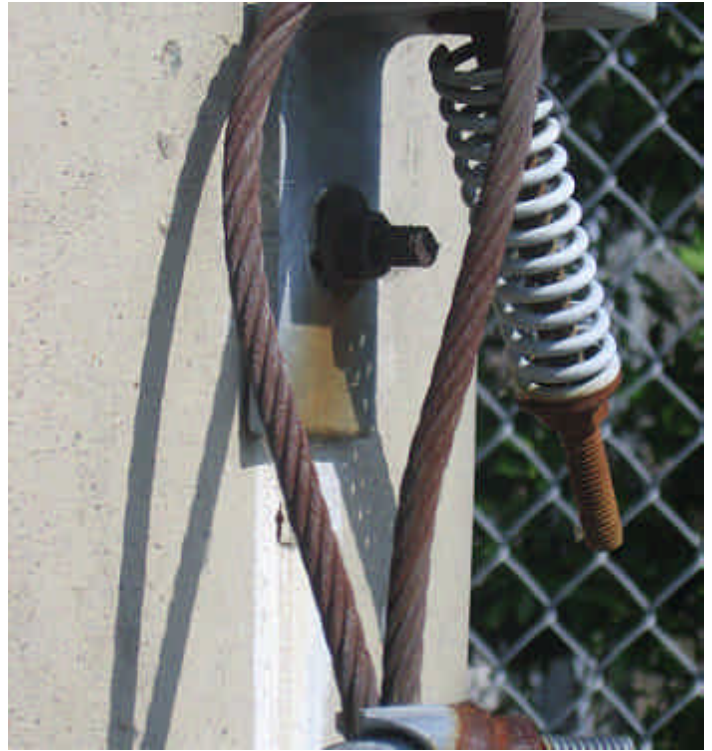


Figure 5 - B
Rusted and failed safety cable at pole 2.



Figure 5 - C
Lower portion of vertical crack at pole 3.
Repair material is loose.



Figure 5 - D
Efflorescence buildup at vertical crack in
pole 2.

ATTACHMENT C



Figure 6 - A
Vertical crack with efflorescence buildup.



Figure 6 - B
Vertical cracks at panel edge and parallel with efflorescence buildup.



Figure 6 - C
Shallow vertical crack with efflorescence buildup.



Figure 6 - D
Vertical crack from bottom right corner of hand hole.

ATTACHMENT C



Figure 7 - A
Vertical crack with some repair material missing.



Figure 7 - B
Repair material on vertical crack at formwork edge.