

**ADAMS, COUNTY
CONSTRUCTION CONTRACT**

THIS CONSTRUCTION AGREEMENT (“Agreement”) is made as of this _____ day of _____, 2013, by and between the Board of County Commissioners of Adams County, Colorado, located at 4430 South Adams County Parkway, Brighton, Colorado 80601, hereinafter referred to as the “County,” and Winner123, Inc., located at Address123 , hereinafter referred to as the “Contractor.”

The County and the Contractor, for the consideration herein set forth, agree as follows:

1. RESPONSIBILITIES/SERVICES OF THE CONTRACTOR

- 1.1. The Contractor shall furnish all of the labor, machinery, equipment, materials, and supplies necessary to perform all of the work shown on the plans and described in the specifications, and in all other documents incorporated herein by reference, entitled:

**ADAMS COUNTY, COLORADO
Invitation to Bid:
Project No.:**

- 1.2. The Contractor shall perform in accordance with the project scope and provisions of the Invitation to Bid, and, in addition to the terms set forth in this Agreement, the Contractor agrees to be bound by and to perform in accordance with the following specified documents attached hereto and incorporated herein as if fully written into this Agreement:

All terms set forth in the BID DOCUMENTS attached hereto and identified as: INVITATION TO BID, BID PROPOSAL, BID SCHEDULE, BID BOND, CONSTRUCTION AGREEMENT, PERFORMANCE & PAYMENT BONDS, INSURANCE, BIDDER'S CLIENT LIST, BIDDER'S CREDIT LIST, NOTICE OF AWARD, ACCEPTANCE OF NOTICE OF AWARD, NOTICE TO PROCEED, LETTER OF ACCEPTANCE, APPLICATION FOR EXEMPTION CERTIFICATE, FIELD ORDER, CHANGE ORDER, APPLICATION FOR PAYMENT, PARTIAL WAIVER OF LIEN, FINAL WAIVER OF LIEN, CERTIFICATE OF FINAL COMPLETION, PROJECT DRAWINGS AND ANY SPECIAL DETAILS.

- 1.3. The Contractor agrees that it has satisfied itself as to the nature and location of the work, the character, quality, and quantity of the materials to be encountered, including subsurface conditions, the equipment and facilities needed to

complete the work, the local conditions, and all other matters which can affect the work under this Agreement.

- 1.4. When required by any document incorporated into this Agreement, certain specified materials shall not be incorporated in the work until tests have been made and the material found to be in accordance with the requirements of the specifications. All costs of initial testing shall be included in the price bid. The Contractor will pay for repeated tests due to failure of initial tests.
- 1.5. This Agreement does not guarantee to the Contractor any work except as authorized in accordance with this Section I, nor does it create an exclusive agreement for services.
- 1.6. The Contractor understands that close cooperation and coordination of this project with all or other contractors or subcontractors is required.

2. RESPONSIBILITIES OF THE COUNTY

- 2.1. Provide information as to its requirements for the project.
- 2.2. Give prompt notice to the Contractor whenever the County observes or otherwise becomes aware of any defect in the project.
- 2.3. Provide reasonable assistance to the Contractor in obtaining approval from all governmental authorities having jurisdiction over the project, and such approvals and consents from such other individuals or bodies as may be necessary for completion of the project.
- 2.4. Furnish, or direct the Contractor to provide, at the County's expense, necessary additional services.

3. TERM

- 3.1. The work to be performed under this Agreement shall commence on _____, and shall be completed no later than midnight on _____.
- 3.2. Adams County at its sole discretion has the option to renew the services to be provided for two additional one year extensions, prevailing upon the same terms and conditions including unit price if any.

4. PAYMENT AND FEE SCHEDULE

- 4.1. The County shall pay the Contractor for services furnished under this Agreement, and the Contractor shall accept as full payment for those services, the sum of _____(\$ _____).
- 4.2. The Contractor shall maintain hourly records of time worked by its personnel to support any audits the County may require, and shall bill the County monthly for costs accrued during the preceding month. Payments on these billings will be subject to estimates prepared by the Project Manager of the value of work performed and materials delivered and materials placed in accordance with the specifications. Upon submission of such billings to the County and approval by the Project Manager, payment shall be issued. It is understood and agreed that the County may require a maximum of thirty-one (31) days to process payment after receiving billing in proper the form.
- 4.3. The County may deduct money from the partial payments in an amount necessary to protect the interests of the County, and is dependent upon the following:
 - 4.3.1. If the Agreement is for one hundred fifty thousand dollars (\$150,000) or more, the County shall withhold five percent (5%) of monthly partial payments until the contract is completed satisfactorily and finally accepted by the County. For Agreements less than one hundred fifty thousand dollars (\$150,000), the County may withhold more than five percent (5%).
 - 4.3.2. All money withheld pursuant to this section shall be retained by the County no more than thirty (30) days after the project has been completed to satisfaction and has been finally accepted by the County. If the County finds that satisfactory progress is being made in all phases of the Agreement, the County may, upon written request of the Contractor, authorize payment from the withheld percentage. Before such payment is made, the County shall determine that satisfactory and substantial reasons exist for the payment, and shall require written approval from any surety furnishing bonds for the work performed under the terms of this Agreement.
- 4.4. Fund Availability: The County has appropriated sufficient funds for this Agreement for the current fiscal year. Payment pursuant to this Agreement, whether in full or in part, is subject to and contingent upon the continuing availability of County funds for the purposes hereof. In the event funds become unavailable, as determined by the County, the County may immediately terminate this Agreement or amend it accordingly

5. LIQUIDATED DAMAGES

- 5.1. The Contractor agrees that time is of the essence in the performance of this Agreement. If the Contractor is delayed for any reason beyond its control, the Contractor shall submit the reason for the delay in writing to the Project Manager who shall decide whether it sufficiently justifies an extension of the completion date.
- 5.2. All decisions of the Project Manager are at his/her complete discretion and will be final.
- 5.3. Time is of the essence in the performance of this Agreement. In the event the Contractor shall fail to complete all the work to be performed by the completion time aforementioned, the Contractor shall pay to the County as and for liquidated damages, not as a penalty, the applicable sum set forth in the schedule below, for each and every calendar day that the Contractor shall be in default.

Original Agreement Amount	Daily Charge	
From More Than	To and Including	
\$ 0	\$ 25,000	\$ 270
25,000	50,000	465
50,000	100,000	540
100,000	500,000	950
500,000	1,000,000	1,250
1,000,000	2,000,000	1,400
2,000,000	4,000,000	1,750
4,000,000	8,000,000	1,970
8,000,000	10,000,000	2,050

Over \$10,000,000, the daily charge will increase by \$100 increments for each \$2,000,000 over \$10,000,000.

- 5.4. Any deduction assessed as liquidated damages under this section shall not relieve the Contractor from liability for any damages or costs resulting from delays to other contractors on the job or to other projects caused by a failure of the Contractor to complete the work according to the agreed time.
- 5.5. Any extension(s) of the completion date authorized by the Project Manager pursuant to this section shall not relieve the Contractor from liability for any damages or costs resulting from delays to other contractors on the job. The Contractor agrees to indemnify and hold the County harmless from any claim against the County resulting from the Project Manager authorizing an extension

of the completion date or from the Contractor's failure to complete this Agreement by the completion date aforementioned.

5.6. Permitting the Contractor to continue and finish the work, or any part thereof, after elapse of the agreed time will not operate as a waiver on the part of the County of any of its rights under this Agreement.

6. **SUBCONTRACTING:** The Contractor may utilize the services of subcontractors on those parts of the work that would normally be performed by subcontractors. But the Contractor shall not subcontract any portion of the work until the written approval of such action has been obtained from the Project Manager. The Contractor shall be fully responsible to the County for the acts and omissions of its subcontractors and their employees.

7. **CHANGE ORDERS OR EXTENSIONS**

7.1. The County may, from time to time, require changes in the scope of the services of the Contractor to be performed herein including but not limited to additional instructions, additional work, and the omission of work previously ordered. Such changes, including any increase or decrease in the amount of the Contractor's compensation, must be mutually agreed upon in writing by the County and the Contractor. The Contractor shall be compensated for all authorized changes in services, pursuant to the applicable provision in the Invitation to Bid, or, if no provision exists, pursuant to the terms of a Change Order.

7.2. The County may, upon mutual written agreement by the parties, extend the time of completion of services to be performed by the Contractor.

8. **INSPECTIONS, REVIEWS AND AUDITS**

8.1. When the work is completed, the Contractor shall file a written notice with the Project Manager that the work, in the opinion of the Contractor, has been finished. Within ten (10) days after the Contractor files the written notice, the Project Manager and the Contractor shall make a final inspection of the project to determine whether all of the work has been completed in accordance with this Agreement and with all documents incorporated herein. A final list shall be made by the County, in sufficient detail to fully outline to the Contractor the following items:

8.1.1. Work to be completed, if any;

8.1.2. Work not in compliance with the Agreement, if any; and

8.1.3. Unsatisfactory work for any reason, if any.

8.1.4. The County shall not authorize final payment until all items on the list, if any, have been completed to the satisfaction of the Project Manager.

9. **CLEAN-UP:** The Contractor shall frequently clean up all refuse or scrap materials resulting from the progress of the work. Upon completion of the work and prior to final inspection, the Contractor shall remove from the construction site and occupied adjoining property all refuse, unused materials, forming lumber, sanitary facilities, and any other materials belonging to the Contractor or subcontractors. Failure of the Contractor to clean up and restore the site satisfactorily will result in the County doing so. The cost will be charged to the account of the Contractor or his/her surety.

10. **PROJECT ADMINISTRATION**

- 10.1. The Project Manager for this Agreement shall be _____, who can be reached by phone at 720_____. The Project Manager does not have the authority to alter or modify the terms of this Agreement.
- 10.2. The Project Manager is designated by the County to exercise authority on its behalf under this Agreement, and to see that it is performed according to its terms. The Project Manager shall furnish all explanations or directions and inspections necessary to carry out and complete satisfactorily the services contemplated and provided for under this Agreement. The Project Manager shall also approve all report formats and related procedures, and shall be responsible for final acceptance of all work performed. Any conflict between the plans or specifications, and any other document incorporated herein, shall be submitted in writing to the Project Manager for review and determination.
- 10.3. If the Contractor considers any work demanded to be outside the Agreement requirements, or considers any determination of the Project Manager to be unfair, the Contractor shall immediately ask for a written instruction or decision from the Project Manager and shall proceed to perform the services to conform with the Project Manager's determination. If the Contractor considers such instructions or decision to be unsatisfactory, it shall, within five (5) days after their receipt, file a written protest with the Adams County Purchasing Office stating the objections and the reasons therefore. Unless protests or objections are made in the manner specified and within the time limit stated herein, the Contractor hereby waives all grounds for protests.
- 10.4. All claims, disputes and other matters in question arising out of or relating to the Agreement documents or breach thereof between the Project Manager and the Contractor shall be submitted to the Adams County Purchasing Office.

11. **NONDISCRIMINATION**

- 11.1. The Contractor shall not discriminate against any employee or qualified applicant for employment because of age, race, color, religion, marital status, disability, sex, or national origin. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices provided by the local public agency setting forth the provisions of this nondiscrimination clause.
- 11.2. The Contractor will cause the foregoing provisions to be inserted in all subcontracts for any work covered by this Agreement so that such provisions will be binding upon each subcontractor, provided that the foregoing provisions shall not apply to contracts or subcontracts for standard commercial supplies or raw materials.

12. INDEPENDENT CONTRACTOR: In providing services under this Agreement, the Contractor acts as an independent contractor and not as an employee of the County. The Contractor shall be solely and entirely responsible for his/her acts, and the acts of his/her employees, agents, servants, and subcontractors during the term and performance of this Agreement. No employee, agent, servant, or subcontractor of the Contractor shall be deemed to be an employee, agent, or servant of the County because of the performance of any services or work under this Agreement. The Contractor, at its expense, shall procure and maintain workers' compensation insurance as required by State law and personal injury and property damage insurance in the coverage amounts as described in Section XIV. . **Pursuant to the Workers' Compensation Act § 8-40-202(2)(b)(IV), C.R.S., as amended, the Contractor understands that it and its employees and servants are not entitled to workers' compensation benefits from the County. The Contractor further understands that it is solely obligated for the payment of federal and state income tax on any moneys earned pursuant to this Agreement.**

13. INDEMNIFICATION: The Contractor agrees to indemnify and to hold the County and its agents harmless for, from, and against any and all claims, suits, expenses, damages or other liabilities, including reasonable attorney fees and court costs, arising out of damage or injury to persons or property caused or sustained by any person, persons, or entities as a result of the performance or failure of the Contractor, its agents or employees, or any subcontractor to provide services pursuant to the terms of this Agreement.

14. INSURANCE

- 14.1. The Contractor shall furnish a certificate of insurance for commercial general liability, comprehensive automobile liability, workers' compensation, and professional liability upon notification of award and prior to performance. Work shall not commence under this Agreement until the Contractor has submitted to the County, and received approval thereof, the certificate of

insurance showing compliance with the following types and coverages of insurance.

- 14.1.1. Commercial General Liability Insurance: to include products liability, completed operations, contractual, broad form property damage, and personal injury.

Each Occurrence	\$1,000,000
General Aggregate	\$2,000,000

- 14.1.2. Comprehensive Automobile Liability Insurance: to include all motor vehicles owned, hired, leased, or borrowed.

Bodily Injury/Property Damage	\$1,000,000 (each accident)
Personal Injury Protection	Per Colorado Statutes

- 14.1.3. Workers' Compensation Insurance: Per Colorado Statutes

- 14.1.4. Professional Liability Insurance: to include coverage for damages or claims for damages arising out of the rendering, or failure to render, any professional services.

Each Occurrence	\$1,000,000
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- 14.1.5. This insurance requirement applies only to Contractors who are performing services under this Agreement as professionals licensed under the laws of the State of Colorado, such as physicians, lawyers, engineers, nurses, mental health providers, and any other licensed professionals.

- 14.2. The Contractor's commercial general liability, comprehensive automobile liability, workers' compensation, and professional liability insurance policies and/or certificates of insurance shall be issued to include Adams County as an "additional insured" and shall include the following provisions:

- 14.2.1. Underwriters shall have no right of recovery or subrogation against the County, it being the intent of the parties that the insurance policies so effected shall protect both parties and be primary coverage for any and all losses resulting from the actions or negligence of the Contractor.

- 14.2.2. The insurance companies issuing the policy or policies shall have no response against the County for payment of any premiums due or for any assessments under any form of any policy.

- 14.2.3. Any and all deductibles contained in any insurance policy shall be assumed by and at the sole risk of the Contractor.

14.2.4. If any of the said policies shall be or at any time become unsatisfactory to the County as to form or substance, or if a company issuing any such policy shall be or at any time becomes unsatisfactory to the County, the Contractor shall promptly obtain a new policy, submit the same to the Purchasing Agent of Adams County for approval, and thereafter submit a certificate of insurance as herein provided. Upon failure of the Contractor to furnish, deliver, and maintain such insurance as provided herein, this Agreement, at the election of the County, may be immediately declared suspended, discontinued, or terminated. Failure of the Contractor to obtain and/or maintain any required insurance shall not relieve the Contractor from any liability under the Agreement, nor shall the insurance requirements be construed to conflict with the obligations of the Contractor concerning indemnification.

14.3. If the Contractor is a Joint Venture, then the respective parties thereto are each individually held fully responsible for completion of the project according to the terms of this Agreement. The parties thereto also have joint and several liability to the County for any liquidated damages assessed or for performance bond claims against the Joint Venture. The performance bond and all insurance required by this Agreement shall set forth the identity of each party to the Joint Venture.

15. TERMINATION

15.1. **TERMINATION OF AGREEMENT FOR CONVENIENCE OF THE COUNTY:** The County, at its sole option and discretion, may terminate this Agreement at any time by giving written notice to the Contractor of such termination and specifying the effective date thereof, at least fifteen days before the effective date of termination. If the Agreement is terminated by the County, the Contractor will be paid an amount which bears the same ratio to the total compensation as the services actually performed bear to the total services of the Contractor covered by this Agreement, less payments of compensation previously made.

15.2. **TERMINATION OF AGREEMENT FOR CAUSE:** If, through any cause, the Contractor shall fail to fulfill its obligations under this Agreement in a timely and proper manner, or if the Contractor shall violate any of the covenants, agreements, or stipulations of this Agreement, the County shall thereupon have the right to immediately terminate this Agreement upon giving written notice to the Contractor of such termination and specifying the effective date thereof.

15.3. **OWNERSHIP OF PARTIALLY COMPLETED WORK:**

15.3.1. All work accomplished by the Contractor prior to the date of such termination shall be recorded and tangible work documents shall be

transferred to and become the sole property of the County prior to payment for services rendered.

- 15.3.2. Notwithstanding the above, the Contractor shall not be relieved of liability to the County for damages sustained by the County by virtue of any breach of the Agreement by the Contractor and for the purposes of setoff until such time as the exact amount of damages due the County from the Contractor is determined.

16. BONDING: The Contractor shall secure a Performance Bond and a Payment Bond each in the amount of one hundred percent (100%) of the Agreement price with a corporate surety approved by the County and licensed to do business in the State of Colorado, said bonds to be released at the sole direction of the County.

17. WARRANTY: The Contractor warrants and guarantees to the County that all work, equipment, and materials furnished under the Agreement are free from defects in workmanship and materials for a period of one (1) year after final acceptance by the County. The Contractor further warrants and guarantees that the plans and specifications incorporated herein are free of fault and defect sufficient for the Contractor to warrant the finished product after completion date. Should the Contractor fail to proceed promptly in accordance with this guarantee, the County may have such work performed by another contractor at the expense of the original Contractor. This section does not relieve the original Contractor from liability for defects which become known after one (1) year.

18. MUTUAL UNDERSTANDINGS

- 18.1. Jurisdiction and Venue: The laws of the State of Colorado shall govern as to the interpretation, validity, and effect of this Agreement. The parties agree that venue and jurisdiction for disputes regarding performance of this Agreement are with the District Court of Adams County, Colorado.
- 18.2. Compliance with Laws: The Contractor, at all times during the performance of this Agreement, agrees to strictly adhere to all applicable federal, state, and local laws, rules, and regulations that affect or govern the work as contemplated under this Agreement. If applicable, the Contractor and subcontractors shall abide by all applicable provisions of the Davis-Bacon Act for payment of wages to employees and the Contract Work Hours and Safety Standards Act. The parties hereto aver that they are familiar with §§ 18-3-301, et seq., C.R.S. (Bribery and Corrupt Influences), as amended, and §§ 18-8-401, et seq., C.R.S. (Abuse of Public Office), as amended, and that no violation of such provisions are present.
- 18.3. Record Retention: The Contractor shall maintain records and documentation of the services provided under this Agreement, including fiscal records, and

shall retain the records for a period of three (3) years from the date this Agreement is terminated. Said records and documents shall be subject at all reasonable times to inspection, review, or audit by authorized federal, state, or County personnel.

- 18.4. Assignability: Neither this Agreement, nor any rights hereunder, in whole or in part, shall be assignable or otherwise transferable by the Contractor without the prior written consent of the County.
- 18.5. Waiver: Waiver of strict performance or the breach of any provision of this Agreement shall not be deemed a waiver, nor shall it prejudice the waiving party's right to require strict performance of the same provision, or any other provision in the future, unless such waiver has rendered future performance commercially impossible.
- 18.6. Force Majeure: Neither party shall be liable for any delay or failure to perform its obligations hereunder to the extent that such delay or failure is caused by a force or event beyond the control of such party including, without limitation, war, embargoes, strikes, governmental restrictions, riots, fires, floods, earthquakes, or other acts of God.
- 18.7. Notice: Any notices given under this Agreement are deemed to have been received and to be effective: (1) three (3) days after the same shall have been mailed by certified mail, return receipt requested; (2) immediately upon hand delivery; or (3) immediately upon receipt of confirmation that a facsimile was received. For the purposes of this Agreement, any and all notices should be addressed to the contacts listed below:

<u>Adams County Attorney's Office</u> <u>450 S. 4th Avenue</u> <u>Brighton, Colorado 80601</u> <u>Phone: 720-523-6116</u> <u>Fax: 720-523-6114</u>
<u>Adams County</u> <u>Contact: Loren Imhoff, Purchasing Manager</u> <u>Address: 450 South 4th Ave., Brighton, CO 80601</u> <u>Phone: 720-523-6057</u> <u>Fax: 720-523-6058</u> <u>E-mail: limhoff@co.adams.co.us</u>
<u>Winner123</u> <u>Address123</u> <u>Contact:</u> <u>Phone:</u> <u>Fax:</u>

[E-mail:](#)

- 18.8. Integration of Understanding: This Agreement contains the entire understanding of the parties hereto and neither it, nor the rights and obligations hereunder, may be changed, modified, or waived except by an instrument in writing that is signed by the parties hereto.
- 18.9. Severability: If any provision of this Agreement is determined to be unenforceable or invalid for any reason, the remainder of this Agreement shall remain in effect, unless otherwise terminated in accordance with the terms contained herein.
- 18.10. Authorization: Each party represents and warrants that it has the power and ability to enter into this Agreement, to grant the rights granted herein, and to perform the duties and obligations herein described.

19. COMPLIANCE WITH C.R.S. § 8-17.5-101, ET. SEQ. AS AMENDED 5/13/08:

Pursuant to Colorado Revised Statute (C.R.S.), § 8-17.5-101, *et. seq.*, as amended 5/13/08, the Contractor shall meet the following requirements prior to signing this Agreement (public contract for service) and for the duration thereof:

- 19.1. The Contractor shall certify participation in the E-Verify Program (the electronic employment verification program that is authorized in 8 U.S.C. § 1324a and jointly administered by the United States Department of Homeland Security and the Social Security Administration, or its successor program) or the Department Program (the employment verification program established by the Colorado Department of Labor and Employment pursuant to C.R.S. § 8-17.5-102(5)) on the attached certification.
- 19.2. The Contractor shall not knowingly employ or contract with an illegal alien to perform work under this public contract for services.
- 19.3. The Contractor shall not enter into a contract with a subcontractor that fails to certify to the Contractor that the subcontractor shall not knowingly employ or contract with an illegal alien to perform work under this public contract for services.
- 19.4. At the time of signing this public contract for services, the Contractor has confirmed the employment eligibility of all employees who are newly hired for employment to perform work under this public contract for services through participation in either the E-Verify Program or the Department Program.

- 19.5. The Contractor shall not use either the E-Verify Program or the Department Program procedures to undertake pre-employment screening of job applicants while this public contract for services is being performed.
- 19.6. If Contractor obtains actual knowledge that a subcontractor performing work under this public contract for services knowingly employs or contracts with an illegal alien, the Contractor shall: notify the subcontractor and the County within three days that the Contractor has actual knowledge that the subcontractor is employing or contracting with an illegal alien; and terminate the subcontract with the subcontractor if within three days of receiving the notice required pursuant to the previous paragraph, the subcontractor does not stop employing or contracting with the illegal alien; except that the contractor shall not terminate the contract with the subcontractor if during such three days the subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with an illegal alien.
- 19.7. Contractor shall comply with any reasonable requests by the Department of Labor and Employment (the Department) made in the course of an investigation that the Department is undertaking pursuant to the authority established in C.R.S. § 8-17.5-102(5).
- 19.8. If Contractor violates this Section, of this Agreement, the County may terminate this Agreement for breach of contract. If the Agreement is so terminated, the Contractor shall be liable for actual and consequential damages to the County.

CONTRACTOR’S CERTIFICATION OF COMPLIANCE

Pursuant to Colorado Revised Statute, § 8-17.5-101, *et.seq.*, as amended 5/13/08, as a prerequisite to entering into a contract for services with Adams County, Colorado, the undersigned Contractor hereby certifies that at the time of this certification, Contractor does not knowingly employ or contract with an illegal alien who will perform work under the attached contract for services and that the Contractor will participate in the E-Verify Program or Department program, as those terms are defined in C.R.S. § 8-17.5-101, *et. seq.* in order to confirm the employment eligibility of all employees who are newly hired for employment to perform work under the attached contract for services.

CONTRACTOR:

Company Name

Date

Name (Print or Type)

Signature

Title

Note: Registration for the E-Verify Program can be completed at: <https://www.vis-dhs.com/employerregistration>. It is recommended that employers review the sample “memorandum of understanding” available at the website prior to registering

IN WITNESS WHEREOF, the parties hereto have caused their names to be affixed hereto.

BOARD OF COUNTY COMMISSIONERS ADAMS COUNTY, COLORADO _____	_____
Chair	Date
APPROVED AS TO FORM: _____	_____
Adams County Attorney's Office	Date:
ATTEST: KAREN LONG CLERK AND RECORDER _____	_____
Deputy Clerk	Date:
Contractor _____ Name: _____ Title:	_____ Date:

**GEOTECHNICAL INVESTIGATION
FLATROCK TRAINING FACILITY
WATER TREATMENT AND PUMP HOUSE
EAST 128TH AVENUE AND GUN CLUB ROAD
AURORA, COLORADO**

Prepared For:

**OFFICE OF THE PURCHASING MANAGER
Adams County Administration Building
4430 South Adams County Parkway
Brighton, Colorado 80601**

Attention: Liz Estrada

Project No. DN46,247-125

October 24 2012



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SCOPE

This report presents the results of our Geotechnical Investigation for the proposed water treatment and pump house at the Flatrock Training Facility located southeast of the intersection of East 128th Avenue and Gun Club Road in Adams County, Colorado. The purpose of our investigation was to evaluate subsurface conditions in order to provide geotechnical recommendations for the proposed construction. The scope was described in our Contract Modification No. 1(DN 12-0342CM1) dated September 27, 2012.

This report was prepared from data developed during field exploration, laboratory testing, engineering analysis, and our experience with similar conditions. It includes our opinions and recommendations for design criteria and construction details for foundations, floor systems and surface drainage. The report was prepared for the exclusive use of Adams County and the design team for the design and construction of the proposed pump house. Revisions of the planned construction could affect our recommendations. If the construction will differ from the descriptions contained in this report, we should be contacted to review the changes and evaluate whether new recommendations and/or design criteria are merited. A summary of our findings and conclusions is presented below. Detailed design criteria are presented within the report.

SUMMARY OF CONCLUSIONS

1. Subsoils found in our exploratory borings generally consisted of about 18 to 20.5 feet of sandy clay and silty and clayey sand underlain by weathered to comparatively unweathered claystone, sandstone and interbedded claystone/sandstone bedrock to the maximum depth explored of 30 feet. Samples of clay and bedrock exhibited low swell and compression after wetting under applied pressures of 500 and 1,000 psf. The sand and sandstone are judged non-expansive or low swelling.
2. Groundwater was not encountered in borings during drilling and when checked eight days after drilling. Ground water may occur and a perched water may develop above the bedrock surface after landscaping irrigation starts.



3. A 35 feet long and 10.5-foot diameter, fiberglass water tank will be installed partially under the pump house building. The excavation for the tank installation will be about 15.5 feet deep. The potential settlement of the backfill, the compressibility of the tank and the interaction between the pump building foundation and the tank will affect the building foundation design and construction. We believe helical piles bottomed in bedrock and a structurally supported floor will have least potential movements. Footings and slabs-on-grade can be used if the potential settlements of the footings and slabs are controlled to an acceptable level and the tank will not be over-stressed by the foundation and slab loads.
4. Footings located about 2 feet horizontally from the edge of the tank may be lowered to about six feet below the ground surface to avoid applying loads on the tank. Footings may also be relocated further away from the tank to reduce and avoid the interaction between the footings and the tank (Figs. 3 and 4).
5. Excavations should be shored, braced and/or properly sloped to meet Occupational Safety and Health Administration (OSHA) regulations. The backfill material and method should follow the tank manufacturer's specifications. Where feasible, the backfill should be moisture conditioned and compacted without causing damage or distress to the tank to reduce infiltration and settlement.
6. To reduce the tank backfill settlement, placement of flow fill is planned to the tank spring line and then on-site soils will be used as backfill to the ground surface. We estimate about one to two inches of soil backfill settlement. Pipe lines buried in the backfill should be designed and constructed with flexibility to accommodate the potential backfill settlements.
7. Proper surface drainage should be constructed and maintained to provide rapid removal of water away from the building and buried tank areas.

SITE CONDITIONS

The Flatrock Training Facility is located southeast of the intersection of East 128th Avenue and Gun Club Road, Adams County, Colorado. The proposed water treatment and pump house is planned in the northeast portion of the facility as shown on Fig. 1. Site grading and development of the facility is in progress at this time. The ground surface is relatively flat and barren of vegetation due to recent grading. A gas well is northeast of the site.



PROPOSED CONSTRUCTION

The pump building will be a one story, pre-engineered steel building approximately 18 feet by 24 feet in plan size. The building will be constructed near existing site grade, at elevation 5245. A 35 feet long, 20000 gallon fiberglass tank of 10.5 feet in diameter will be installed partially under the building. The top of the tank will be about 4 feet below the pump house floor slab and the tank will be about 2 feet horizontally from the footing under one side of the building. The line load from the footing is 1,000 pounds per linear foot dead and the live load is 300 pounds per linear foot.

We were informed that footings constructed in the tank backfill are planned for the pump building. To reduce the potential settlement of the backfill and allow the use of footings and slab above the tank, the tank will be installed on a 12-inch thick pea gravel bed and backfilled with flow fill to the spring line. Soil backfill will be placed above the flow fill. The footings may be constructed 4 feet or deeper below the finished grades. The back wall that crosses over the tank will be designed to span across the tank (no point load on the tank). The slab-on-grade will also be designed to span across the tank.

SUBSURFACE CONDITIONS

Subsurface conditions were investigated by drilling two exploratory borings at the locations shown on Fig. 1 to a depth of 30 feet. Boring locations were staked and surveyed by DCM Construction Management prior to drilling. The borings were drilled with a truck-mounted drill rig and 4-inch diameter, continuous-flight auger. Our field representative observed drilling, logged the soils and bedrock found in the borings and obtained samples. Summary logs of the soils encountered in our borings, field penetration resistance test results and a portion of laboratory test data are presented on Fig. 2.

Strata encountered in the exploratory borings consisted of about 18 to 20.5 feet of sandy clay and silty and clayey sand underlain by weathered to comparatively unweathered claystone, sandstone and interbedded claystone/sandstone bedrock. Weathered bedrock was encountered in TH-2 from 18 to 21 feet deep. The clay was



very stiff, sand was medium dense and the bedrock was medium hard to very hard based on field penetration test results.

Samples of the clay and weathered bedrock and comparatively unweathered claystone bedrock showed compression (0.1 percent) and low swell (0.1 to 1.6 percent) after wetting under applied pressures of 500 and 1,000 psf. Two sand samples had 14 and 23 percent fines (passing the No. 200 sieve). Laboratory test results are presented in Appendix A and summarized in Table A-I.

Groundwater was not encountered in borings during drilling and when the borings were checked 8 days after drilling. Ground water may occur and a perched water may develop above the bedrock surface after landscaping irrigation (if any) starts.

EXCAVATION

We anticipate the excavation for the tank will extend approximately 15.5 feet deep to elevation 5229.5. Our borings indicate clay and sand will be encountered in the excavation. We believe the soils can be excavated with conventional, heavy-duty excavation equipment.

Excavations should be shored, braced or sloped to comply with Occupational Safety and Health Administration (OSHA) standards. For sloped excavations, we believe the clay and sand will be classified as Type C soils. Type C soils require a maximum slope or inclination of 1.5:1 (horizontal to vertical) in dry conditions. Excavation slopes specified by OSHA are dependent upon soil type and ground water conditions exposed. The contractor should identify the soils encountered in the tank excavation and refer to OSHA standards to determine appropriate slopes. Vehicles and soil stockpiles should be kept a minimum lateral distance from the crest of the slope equal to at least one-half the slope height.



BACKFILL

The tank backfill should be placed in accordance with the recommendations provided by the tank manufacturer to avoid damage to the tank. A flow fill will be placed in the lower portion of the excavation to the spring line of the tank. The tank may need to be filled with water and/or anchored to prevent uplift during the placement of flow fill. The flow fill may be placed in thin lifts, which are allowed to set to reduce uplift.

We believe the excavated on-site sand and clay can be used as backfill above the flow fill. Proper placement and compaction of the backfill will help to control potential settlement and associated damages to improvements constructed on the backfill. Compaction of backfill placed in narrow spaces such as between the tank and pipe lines and around the manholes will require special precautions to reduce future settlement. The tank manufacturer has specified using a hand guided vibratory compactor to compact the backfill close to the tank to avoid disturbing the tank. The hand guided vibratory compactor has small energy to compact the backfill. Based on our experience, we estimate the soil backfill may settle about 1 or 2 percent of the backfill depth (or 1 to 2 inches) upon wetting and under vibration. Improvements supported on the backfill and pipe lines in the backfill should be designed to accommodate the potential settlements.

Backfill settlement may cause down-drag on piping which penetrated the fill. Voids may open beneath horizontal pipe, contributing to a loss of support. Design should account for this loss of support either through structural support or flexible connections that allow movement.

Fill should be moisture conditioned, placed in thin, loose lifts of 6 inches or less, and compacted. Clay fill should be moisture conditioned to between optimum and 3 percent above optimum and sand fill should be moisture conditioned to within 2 percent of optimum. Fill should be compacted to at least 95 percent of standard Proctor maximum dry density (ASTM D 698). Placement and compaction of fill should be observed and tested by a representative of our firm during construction.



FOUNDATIONS

A fiberglass tank will be installed below the pump house which makes the design and construction of the foundations complicated. We believe the potential backfill settlement, the compressibility (or bulging) of the tank under the weight of the backfill, footings and slabs, and the interaction between the footings and tank should be considered in the pump house foundation design. We have discussed the potential foundation systems with Martin/Martin.

We believe helical piles bottomed in bedrock and a structurally supported floor will have least potential movements. Helical piles could also be used with a slab-on-grade floor. Footings and slab-on-grade floors and exterior flatwork may be used if the potential settlement, tank deflection, and interaction between the tank, foundation and slabs are controlled to a level acceptable to the owner and the tank manufacturer.

Based on the our discussions with Martin/Martin, we understand that footings and slabs-on-grade are desired. To reduce the potential settlement of the backfill and allow the use of footings and slab above the tank, the tank will be installed on a 12-inch thick pea gravel bed. Flow fill will be used to backfill around the tank to the spring line. Soil backfill will be placed above the flow fill to the finished grade. The footings may be constructed 4 feet below the finished grade. The back wall that crosses over the tank will be designed to span across the tank. The slab on grade will also be designed to span across the tank. We recommend that the flow fill be placed horizontally at least 2 feet beyond the pressure distribution zone below the footings (Fig. 4).

We do not know the compressibility of the tank or how much load from the footings can be applied to the tank. The footing under one side of the building will be about 2 feet horizontally from the tank. To avoid applying footing load on the tank, we recommend this footing be lowered to about six feet below the final grades as shown on Fig. 3 so that load is distribute below the tank or on the flow fill. The footings may be increased in width or moved further away from the tank to reduce or avoid applying the load from the footings on the tank. The interaction between the footings and the tank may be evaluated using Figs. 3 and 4.



Design and construction criteria for the footing foundation and helical piles are presented below.

Footing Foundation

1. **Footings should be constructed on moisture conditioned, properly compacted fill or flow fill. Loose soils should be removed from the foundation excavation and replaced with moisture conditioned and properly compacted fill as recommended in BACKFILL, prior to placing concrete.**
2. **Footings should be designed for a maximum allowable soil pressure of 1,500 psf. We estimate potential footing settlements of about one inch.**
3. **For lateral load resistance, a coefficient of friction between the footings and subsoils of 0.4 may be used in design. A total density of 120 pcf may be assumed for the backfill placed above footings for friction and uplift resistance.**
4. **Footings should have a minimum width of 12 inches.**
5. **Grade beams should be well reinforced. We recommend reinforcement sufficient to span an unsupported distance of at least 10 feet and across the buried tank. Reinforcement should be designed by the structural engineer.**
6. **Exterior footings must be protected from frost action. Normally, 3 feet of frost cover is assumed in this area.**
7. **Where footings are located close to the tank, interaction between the tank and footings may be evaluated based on Figs. 3 and 4.**
8. **The tank excavation backfill compaction should be observed and tested by a representative of our firm. Footings should be inspected prior to placing concrete.**

Helical Piles Bottomed in Bedrock

1. **Helical pile bearing capacity shall be confirmed in the field using manufacturer recommended capacity/torque ratios. A minimum factor of safety of 2.0 is required between ultimate and allowable capacity.**



2. Contractor shall use the number and size of helical blades required to achieve the required depth, torque, and capacity. However, the ratio of allowable capacity specified by the structural engineer and the total area of helical blades used by the contractor shall not exceed 45,000 pounds per square foot (psf) for piles bottomed in the bedrock.
3. Helical piles should be installed as close as possible to the installation angle specified by the structural engineer. Typical tolerance for commercial work is within ± 1 degree of inclination.
4. The helical pile cap should be able to resist both tension and compression. The structural engineer should design this connection.
5. Twisting of the shaft can occur during the installation process. We recommend steel pipe piles be used because they generally have higher flexure rigidity and load carrying capacity than square-shaft type piles. The structural engineer should evaluate the effect(s) twisting of the shaft may have on the capacity and corrosion protection (such as the “flaking-off” of the galvanizing material) of the helical piles.
6. Round tubular-shaft helical piles can be designed to resist small lateral loads. L-Pile or similar p-y methods of analysis can be used to evaluate lateral load-deflection characteristics. Square shaft helical piles should not be relied upon to resist lateral loads. Battered round or square shaft helical piles can be used to resist higher transverse shear loads.
7. Helical pile shaft and extension couplings should have less than 1/16-inch slack under hand applied tension and compression loads.
8. All helical pile components shall be hot-dip galvanized for corrosion resistance according to ASTM A123 or A153 with the exception of pier caps and bolts, which shall be zinc coated by any recognized method.
9. Piles should have a center-to-center spacing of at least three times the largest helical blade diameter when designing for vertical loading conditions, or they should be designed as a group. Group effect reductions are discussed in a subsequent section.
10. Helical piles shall be advanced in the ground at a rotational rate between 10 and 30 rpm.
11. Installation of helical piles should be observed by a representative of our firm to confirm the depth and installation torque of the helical piles are adequate.



Pile Lateral Load Analysis

Battered piles are recommended to resist lateral loads where practical. Helical piles may be designed to resist lateral loads applied to the structure through wind, seismic, or earth pressure loading. One method to analyze laterally loaded piers is the computer program “LPILE1” developed by Ensoft, Inc. The program uses “P-Y Curves” to simulate the soil resistance to lateral loads in different strata. The recommended soil parameters for the program are shown in the following Table A.

**TABLE A
SOIL INPUT DATA FOR “LPILE”**

	Clayey fill, Clay and Weathered Bedrock	Sand Fill and Sand	Bedrock
Density (pci)	0.06	0.06	0.07
Cohesion, C (psi)	10	0	55
Friction Angle, ϕ Degree	0	33	0
ϵ_{50} (in/in)	0.005	--	0.004
k_s (pci)	1,000	90	2,000
k_c (pci)	400	90	1,000

The ϵ_{50} represents the strain corresponding to 50 percent of the maximum principle stress difference. The modulus of subgrade reaction for static (k_s) and cyclical (k_c) conditions are used by the program to generate the slope of the initial portion of the “P-Y Curves.”

Other procedures require input of a horizontal modulus of subgrade reaction (K_h). For purpose of design, we believe the soil types can be assigned the following values:

Bedrock $K_h = 300/d$ (tons/ft³)
Clay Fill, Clay and Weathered Bedrock $K_h = 30/d$ (tons/ft³)

Where d = pile diameter (ft)



The horizontal modulus of subgrade reaction (K_h) of the overburden sand and sand fill increases with the overburden pressure (or depth) and should be calculated for this project using the following formula:

$$K_h = \frac{N_h Z}{D}$$

Where:

N_h = 21 tcf for soils above ground water

Z = depth in feet below ground surface, and

D = diameter of pile in feet

Closely Spaced Pile Reduction Factors

For axial loading, a minimum spacing of 3 diameters of the end plates (helices) of the helical piles is recommended. At one diameter (piles touching) the skin friction load reduction factor for both piles would be 0.5. End bearing values would not be reduced. Interpolation can be used between 1 and 3 diameters.

Piles in-line with the direction of lateral loads should have a minimum spacing of 6 diameters (center-to-center) based upon the larger pier. If a closer spacing is required, the modulus of subgrade reaction for initial and trailing piles should be reduced. At a spacing of 3 diameters, the effective modulus of subgrade reaction of the lead pile can be estimated by multiplying the given modulus by 0.6; for trailing piles in a line at 3 diameter spacing, the factor is 0.4. Linear interpolation can be used for spacing between 3 and 6 diameters.

Reductions to the modulus of subgrade reaction can be accomplished in LPILE by inputting the appropriate modification factors for p-y curves. Reducing the modulus of subgrade reaction in trailing piles will result in greater computed deflections on these piers. In groups, the grade beam will force deflections of all piles to be equal. Load-deflection graphs can be generated for each pier using the appropriate



p-multiplier values. The sum of the piles lateral load resistance at selected deflections can be used to develop a total lateral load versus deflection graph for the system of piers.

For lateral loads perpendicular to the line of piles a minimum spacing of 3 diameters can be used with no capacity reduction. At one diameter (piles touching) the piers can be analyzed as one unit. Interpolation can be used for intermediate conditions.

FLOOR SYSTEMS

We estimate potential backfill settlements of 1 to 2 inches may occur. If the risk of potential settlement of the backfill is not acceptable, we recommend a structurally supported floor system. The floor can be designed to span from foundation to foundation, and cast “on-grade” since the soils are not exposed. If a structurally supported floor with a crawl space is selected, a drain is recommended in the crawl space below the structural floor (Fig, 5). The below-grade grade beams should be designed to resist lateral earth pressure using an equivalent-fluid density of 60 pcf. If the owner elects to use slab-on-grade construction and accepts the risk of movement and the associated damage, we recommend the following precautions. These precautions can help reduce, but will not eliminate damage or distress due to slab movement.

- 1. Slabs should be separated from exterior grade beams or walls and interior bearing members with a slip joint that allows free vertical movement of the slabs. This detail can reduce cracking when movement of the slab occurs.**
- 2. Slabs should be placed directly on properly moisture conditioned, compacted fill. The 2009 International Building Code (IBC) requires a vapor retarder be placed between the base course or subgrade soils and the concrete slab-on-grade floor. The merits of installation of a vapor retarder below floor slabs depend on the sensitivity of floor coverings and building use to moisture. A properly installed vapor retarder or barrier (10 mil minimum) is more beneficial below concrete slab-on-grade floors where floor coverings, painted floor surfaces or products stored on the floor will be sensitive to moisture. The vapor retarder is most**



effective when concrete is placed directly on top of it, rather than placing a sand or gravel leveling course between the vapor retarder and the floor slab. The placement of concrete on the vapor retarder may increase the risk of shrinkage cracking and curling. Use of concrete with reduced shrinkage characteristics including minimized water content, maximized coarse aggregate content, and reasonably low slump will reduce the risk of shrinkage cracking and curling. Considerations and recommendations for the installation of vapor retarders below concrete slabs are outlined in Section 3.2.3 of the 2006 report of American Concrete Institute (ACI) Committee 302, “Guide for Concrete Floor and Slab Construction (ACI 302.1R-04)”.

3. If slab-bearing partitions are used, they should be designed and constructed to allow for slab movement. At least a 2-inch slip joint should be provided to allow potential movement. If the slip joint is provided at the top of partitions, the connection between slab-supported partitions and foundation-supported walls should be detailed to allow differential movement. Wall partitions perpendicular to the exterior wall or walls supported by foundations should be detailed to allow for vertical movement. Interior perimeter framing and finishing should not extend onto slabs-on-grade, or if necessary should be detailed to allow for movement.
4. Underslab plumbing should be pressure tested for leaks prior to slab construction and be provided with flexible couplings. Pressurized water supply lines should be brought above the floor as quickly as possible.
5. Plumbing and utilities that pass through the slabs and/or grade beams should be isolated from the slabs and grade beams and constructed with flexible couplings. Utilities, as well as electrical and mechanical equipment, should be constructed with sufficient flexibility to allow for at least 2 inches of movement. This includes utilities that pass through or under foundation walls.
6. HVAC systems supported by the slabs (if any) should be provided with flexible connections capable of accommodating at least 2 inches of potential movement.
7. The American Concrete Institute (ACI) recommends frequent control joints in slabs to reduce problems associated with shrinkage cracking and curling. To reduce curling, the concrete mix should have a high aggregate content and a low slump. If desired, a shrinkage compensating admixture could be added to the concrete to reduce the risk of shrinkage cracking. We can perform a mix design or assist the design team in selecting a pre-existing mix.



CONCRETE

Concrete in contact with soil can be subject to sulfate attack. We measured a water-soluble sulfate concentration of 0.01 and 0.05 percent on two samples from this site. Sulfate concentrations less than 0.1 percent indicate Class 0 exposure to sulfate attack for concrete in contact with the subsoils, according to the American Concrete Institute (ACI) *Guide To Durable Concrete (ACI 201.2R-01)*. For this level of sulfate concentration, ACI indicates any type of cement can be used for concrete in contact with the subsoils. In our experience, superficial damage may occur to the exposed surfaces of highly permeable concrete, even though sulfate levels are relatively low. To control this risk and to resist freeze-thaw deterioration, the water-to-cementitious material ratio should not exceed 0.50 for concrete in contact with soils that are likely to stay moist due to surface drainage or high water tables. Concrete should have a total air content of $6\% \pm 1.5\%$. We recommend all walls or grade beams in contact with the subsoils be damp-proofed.

SURFACE DRAINAGE

The performance of foundations is influenced by the moisture conditions in the subsoils. The risk of wetting foundation soils can be reduced by carefully planned and maintained surface drainage. Wetting or drying of the open foundation excavation should be minimized. Backfill should be densely compacted as recommended in the BACKFILL section, to reduce surface water infiltration and settlement. We recommend the ground surface around the building and above the buried tank sloped to drain away from the building and tank in all directions. If practical, a minimum slope of 5 percent should be created.

LIMITATIONS

Two borings were drilled to obtain a general picture of the subsurface conditions. Variations in subsoil conditions are always possible. We should review the tank excavation plan and the construction plan that shows the extent of the excavation



and flow fill, the footing and tank configuration to assure they meet the geotechnical considerations. Backfill compaction should be observed and tested by our firm.

We believe this investigation was conducted in a manner consistent with that level of care and skill ordinarily used by geotechnical engineers practicing in this area at this time. No warranty, express or implied, is made. If we can be of further service in discussing the contents of this report or in the analysis of the influence of subsurface conditions on the design of the structures, please call.

CTL | THOMPSON, INC.


Nan-Ping Hsieh, P.E.
Principal



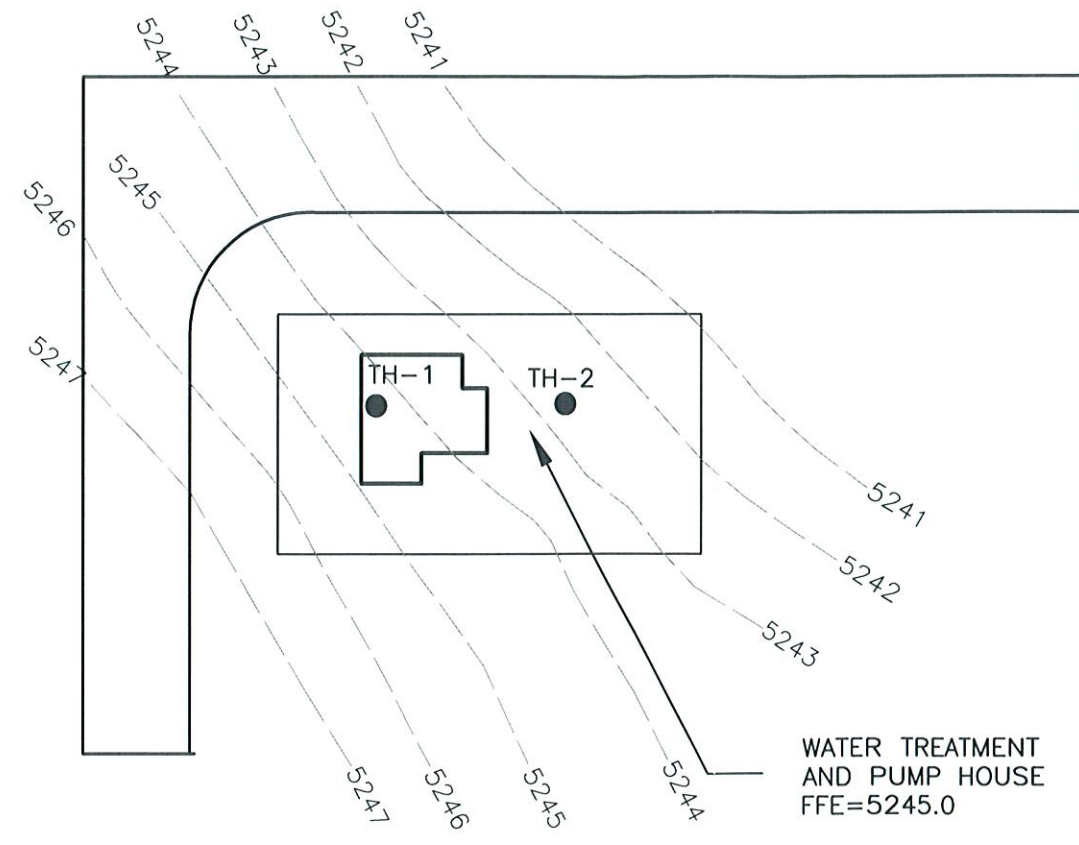
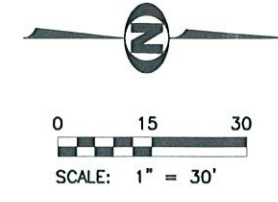
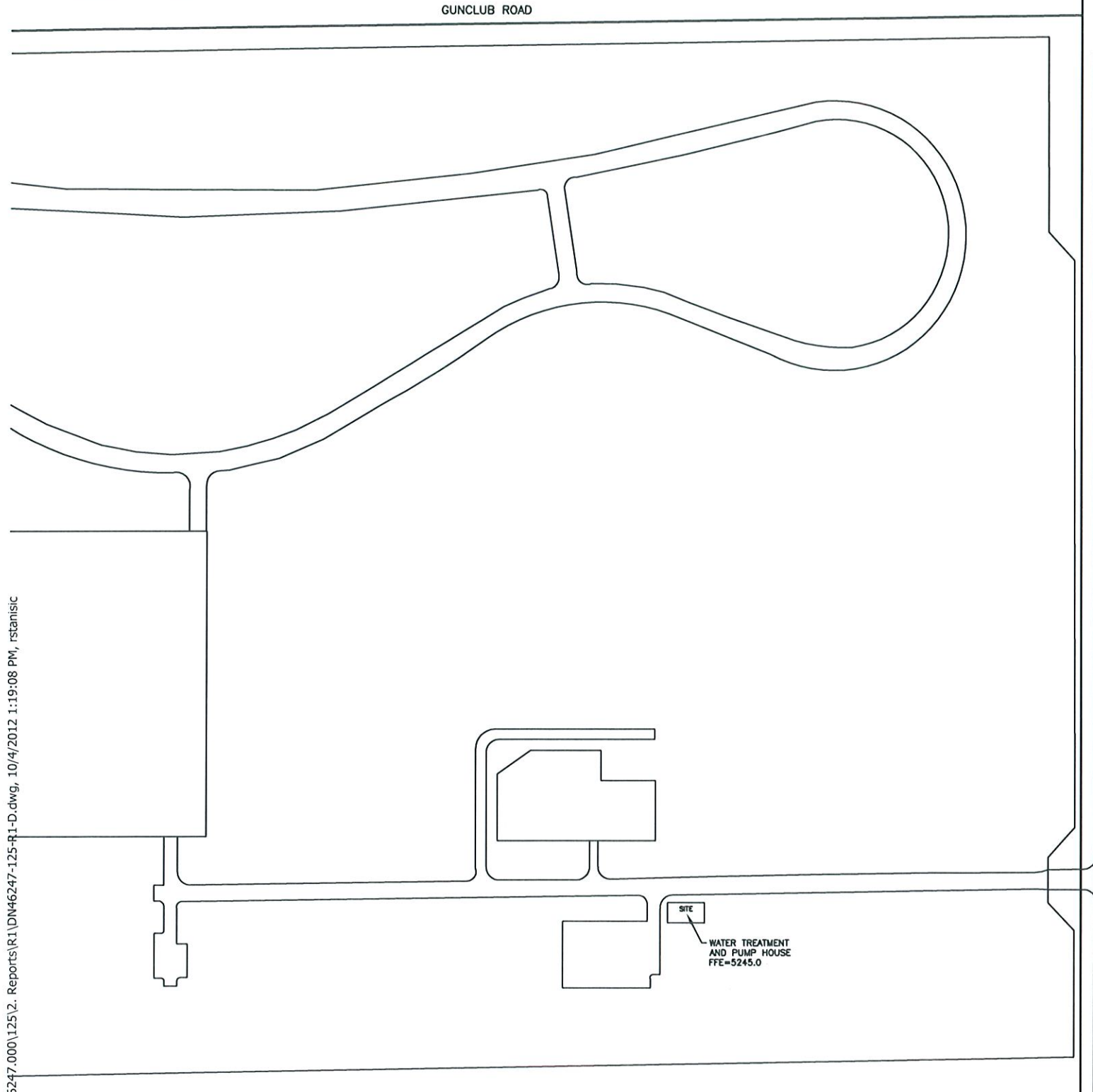
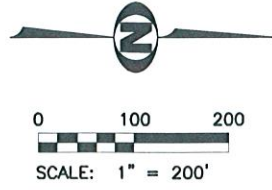
Reviewed by:



Ronald M. McOmber, P.E., D. GE.
Chairman & CEO

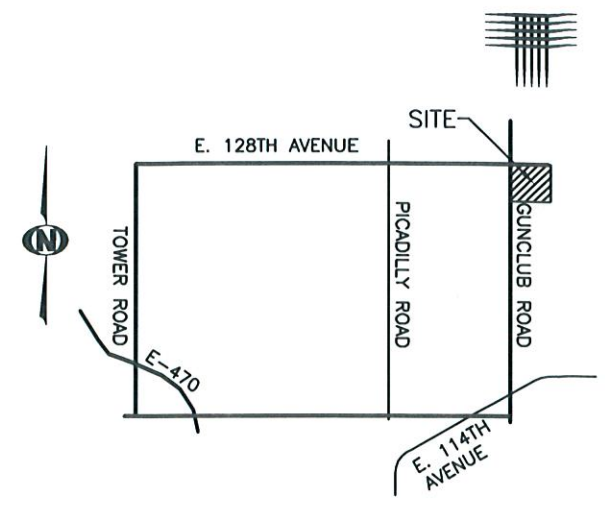
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(3 copies)

Via email: duncansonconst@aol.com
RREMPEL@martinmartin.com
JMay@martinmartin.com



LEGEND:

- TH-1 APPROXIMATE LOCATION OF EXPLORATORY BORING STAKED ON-SITE BEFORE DRILLING BY DCM CONSTRUCTION MANAGEMENT.
- INDICATES EXISTING GROUND SURFACE ELEVATION (FEET)



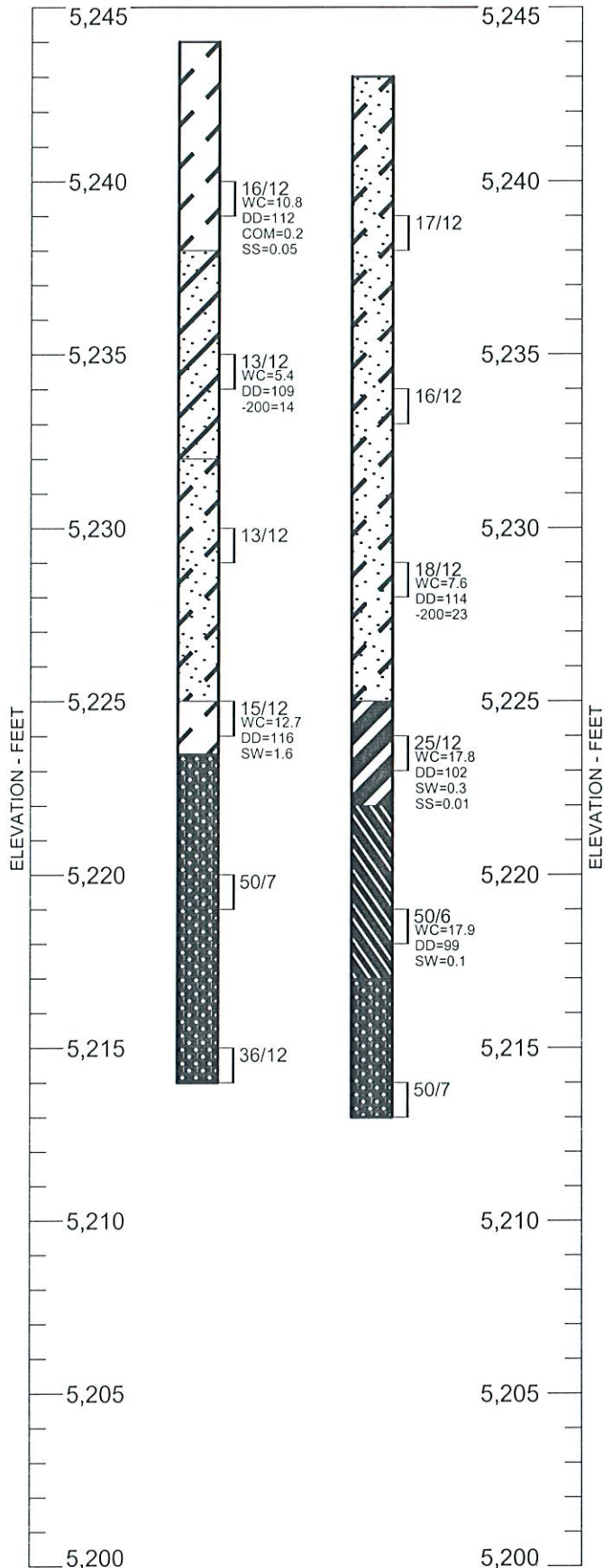
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TH-1
El. 5244

TH-2
El. 5243



LEGEND:

-  CLAY, SANDY, VERY STIFF, MOIST, BROWN (CL).
-  SAND, SILTY, MEDIUM DENSE, MOIST, GRAY, BROWN (SM).
-  SAND, CLAYEY, MEDIUM DENSE, SLIGHTLY MOIST, BROWN, GRAY (SC).
-  WEATHERED CLAYSTONE, MOIST, BROWN, RUST.
-  BEDROCK, SANDSTONE, MEDIUM HARD TO HARD, MOIST, BROWN, TAN.
-  BEDROCK, INTERBEDDED CLAYSTONE/SANDSTONE, VERY HARD, MOIST, BROWN, GRAY.
-  DRIVE SAMPLE. THE SYMBOL 16/12 INDICATES 16 BLOWS OF A 140-POUND HAMMER FALLING 30 INCHES WERE REQUIRED TO DRIVE A 2.5-INCH O.D. SAMPLER 12 INCHES.
-  BUILDING FLOOR ELEVATION (5245).

NOTES:

1. THE BORINGS WERE DRILLED ON SEPTEMBER 24, 2012 USING 4-INCH DIAMETER, CONTINUOUS-FLIGHT AUGER AND A TRUCK-MOUNTED DRILL RIG.
2. THE BORING ELEVATIONS WERE STAKED BY DCM CONSTRUCTION MANAGEMENT. BORING ELEVATION WERE ESTIMATED FROM CONTOURS ON THE SITE PLAN PROVIDED.
3. GROUND WATER WAS NOT ENCOUNTERED DURING THIS INVESTIGATION.
4. WC - INDICATES MOISTURE CONTENT (%).
DD - INDICATES DRY DENSITY (pcf).
SW - INDICATES SWELL WHEN WETTED UNDER APPLIED PRESSURE (%).
COM - INDICATES COMPRESSION WHEN WETTED UNDER APPLIED PRESSURE (%).
-200 - INDICATES PASSING NO. 200 SIEVE (%).
SS - INDICATES WATER SOLUBLE SULFATE CONCENTRATION (%).
5. THESE LOGS ARE SUBJECT TO THE EXPLANATIONS, LIMITATIONS AND CONCLUSIONS AS CONTAINED IN THIS REPORT.

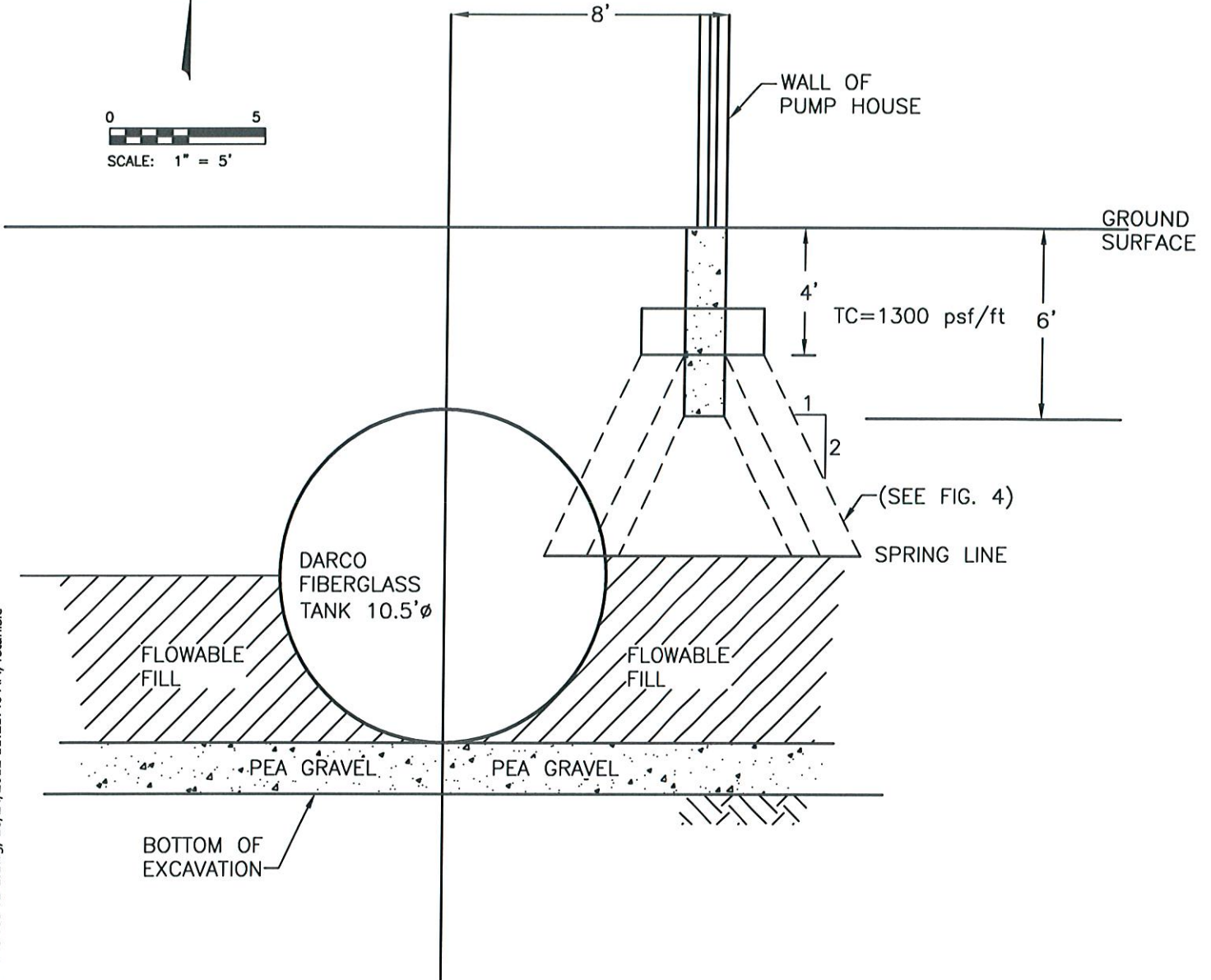
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Summary Logs of Exploratory Borings

FIG. 2

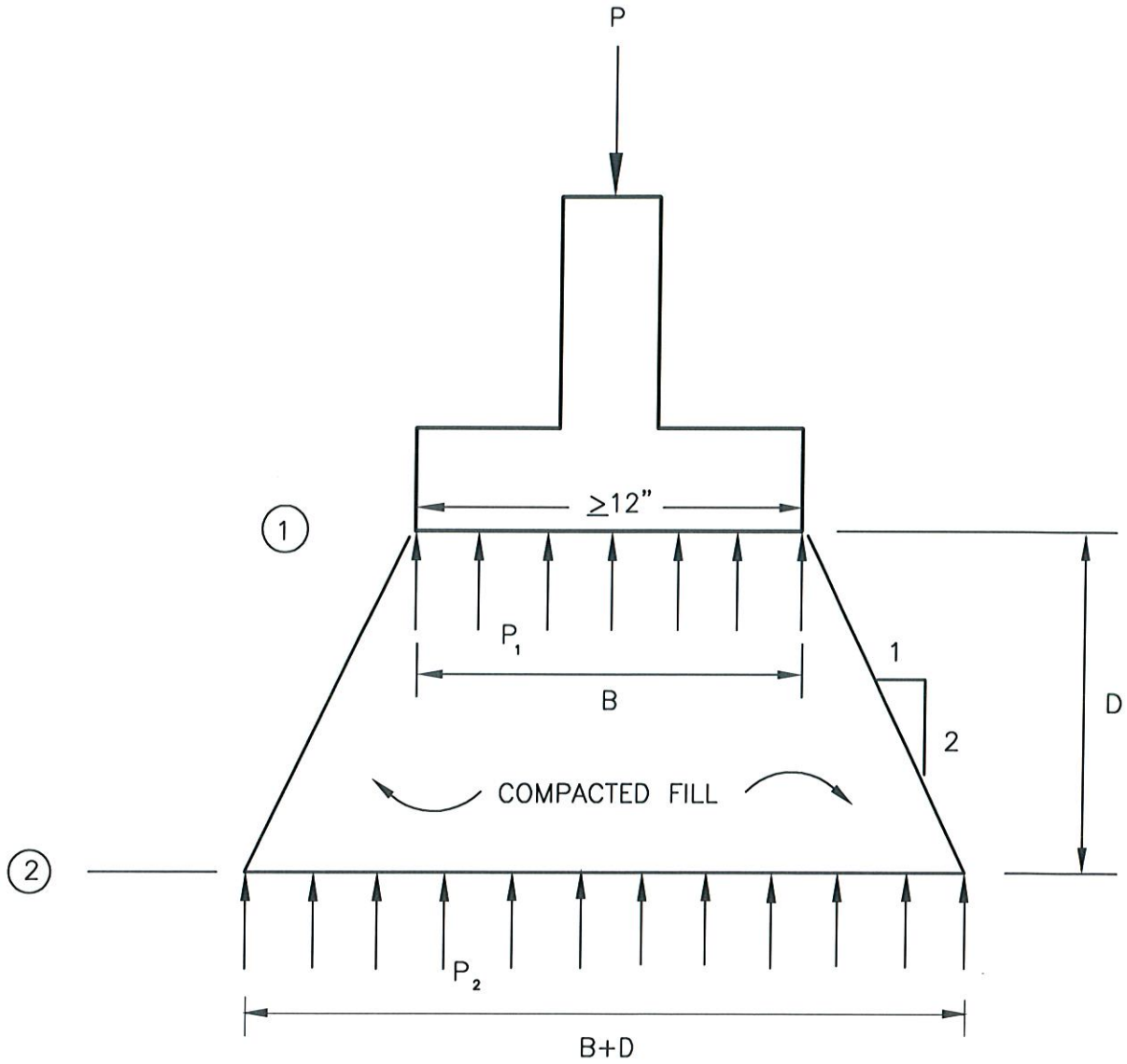


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SCALE: 1" = 5'



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Interaction Between Footing and Tank



STRIP FOOTING

$$P_1 = \frac{P}{B} = 1300\text{psf}$$

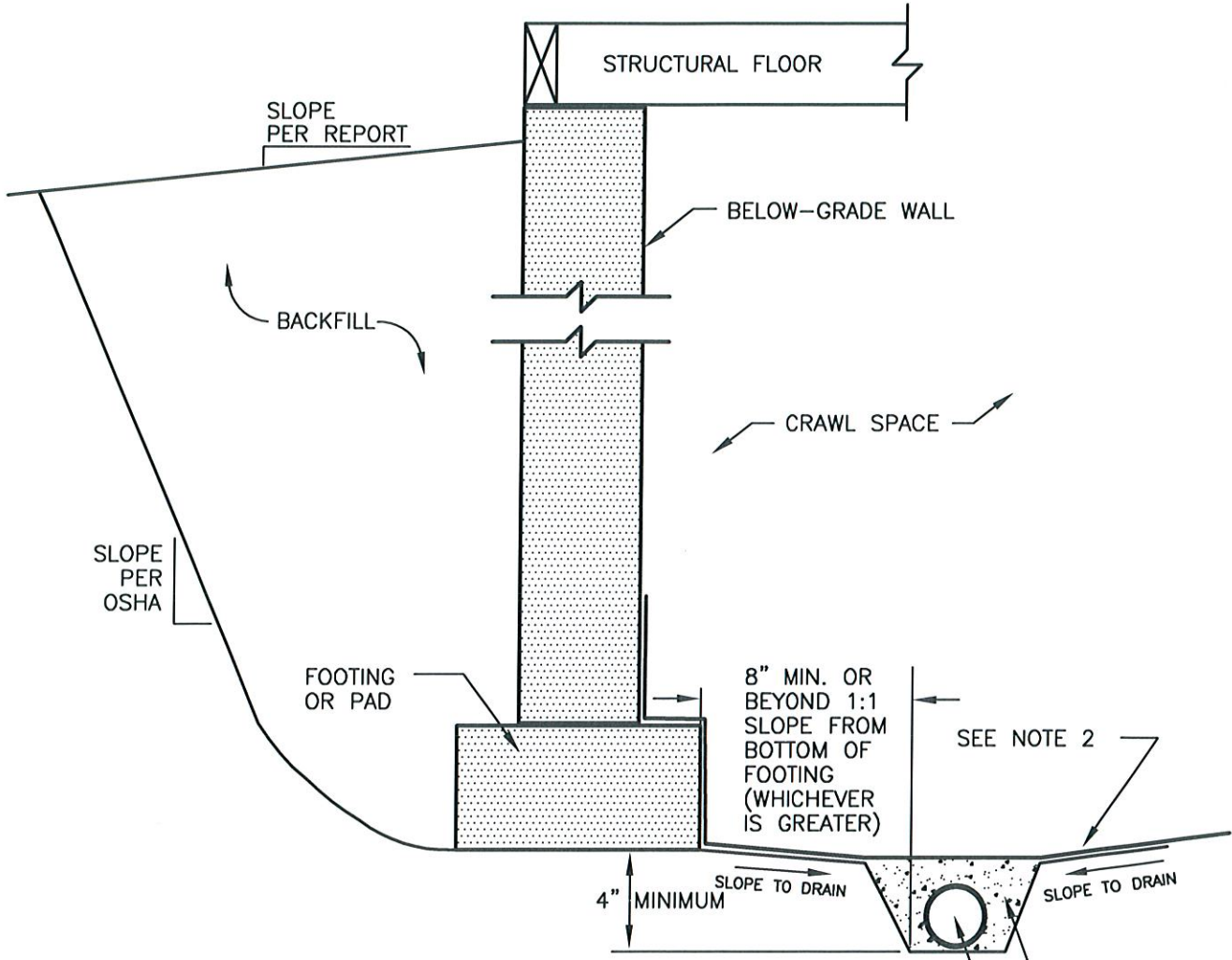
$$P_2 = \frac{P}{B+D}$$

Distribution of Pressure Below Footings

Fig. 4



01-FIG-INT-STF-01



4-INCH DIAMETER PERFORATED RIGID DRAIN PIPE. THE PIPE SHOULD BE PLACED IN A TRENCH WITH A SLOPE OF AT LEAST 1/8-INCH DROP PER FOOT OF DRAIN.

ENCASE PIPE IN 1/2" TO 1-1/2" WASHED GRAVEL. FILL ENTIRE TRENCH WITH GRAVEL.

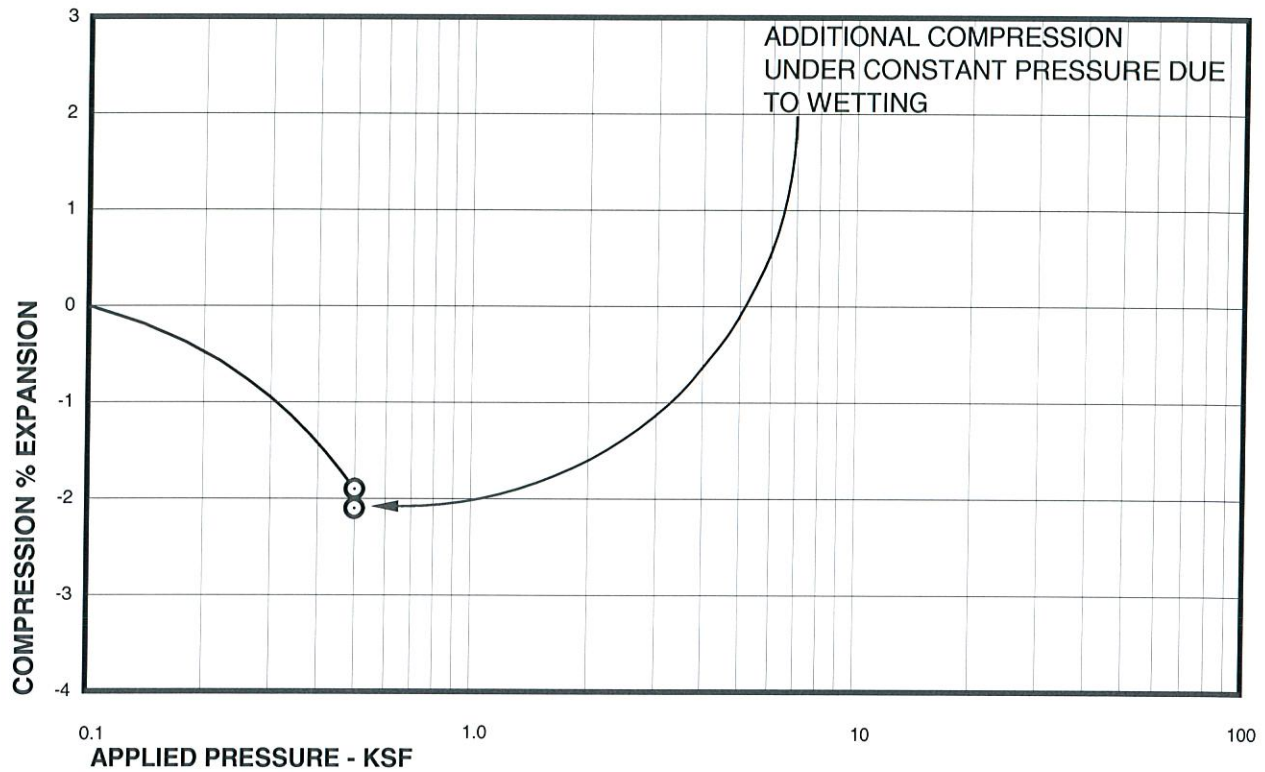
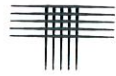
- NOTES:
- 1.) THE BOTTOM OF THE DRAIN SHOULD BE AT LEAST 4 INCHES BELOW BOTTOM OF FOOTING AT THE HIGHEST POINT AND SLOPE DOWNWARD TO A POSITIVE GRAVITY OUTLET OR TO A SUMP WHERE WATER CAN BE REMOVED BY PUMPING.
 - 2.) TO HELP CONTROL THE HUMIDITY IN THE CRAWL SPACE, A MINIMUM 10-MIL POLYETHYLENE VAPOR RETARDER MAY BE PLACED OVER THE CRAWL SPACE SOILS, AT THE BUILDER'S OPTION. THE RETARDER SHOULD BE ATTACHED TO CONCRETE FOUNDATION ELEMENTS AND EXTEND UP FOUNDATION WALLS AT LEAST 8 INCHES ABOVE TOP OF FOOTING. OVERLAP JOINTS 3 FEET AND SEAL.

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Interior Foundation Wall Drain

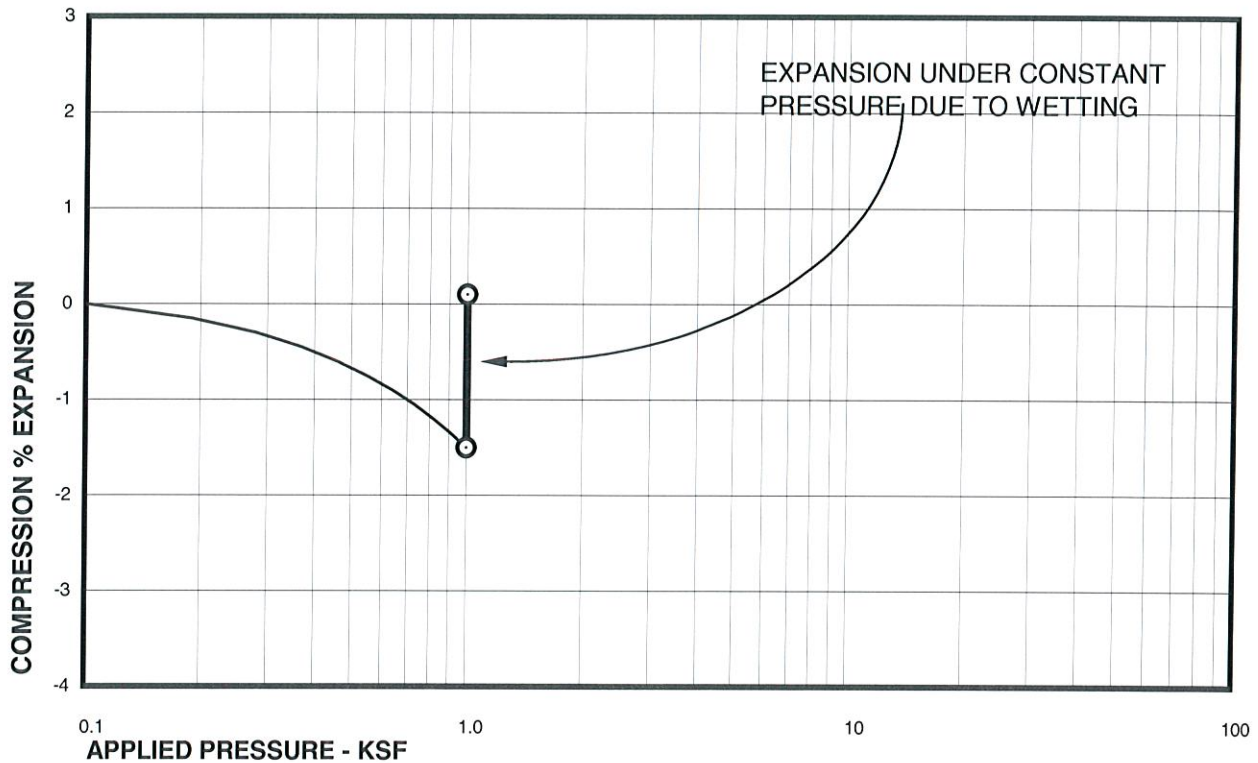


APPENDIX A
SUMMARY OF LABOARTORY TEST RESULTS



Sample of CLAY, SANDY (CL)
From TH-1 AT 4 FEET

DRY UNIT WEIGHT= 112 PCF
MOISTURE CONTENT= 10.8 %

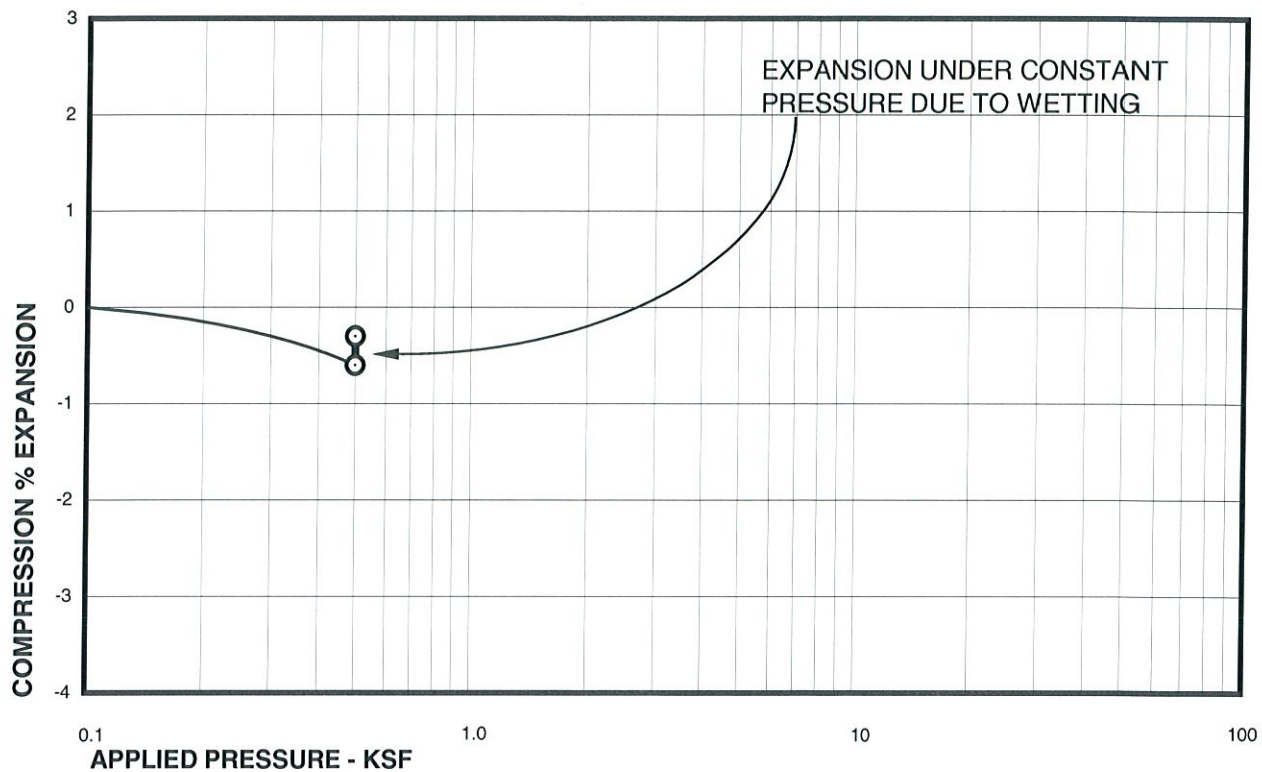
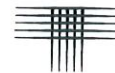


Sample of CLAY, SANDY (CL)
From TH-1 AT 19 FEET

DRY UNIT WEIGHT= 116 PCF
MOISTURE CONTENT= 12.7 %

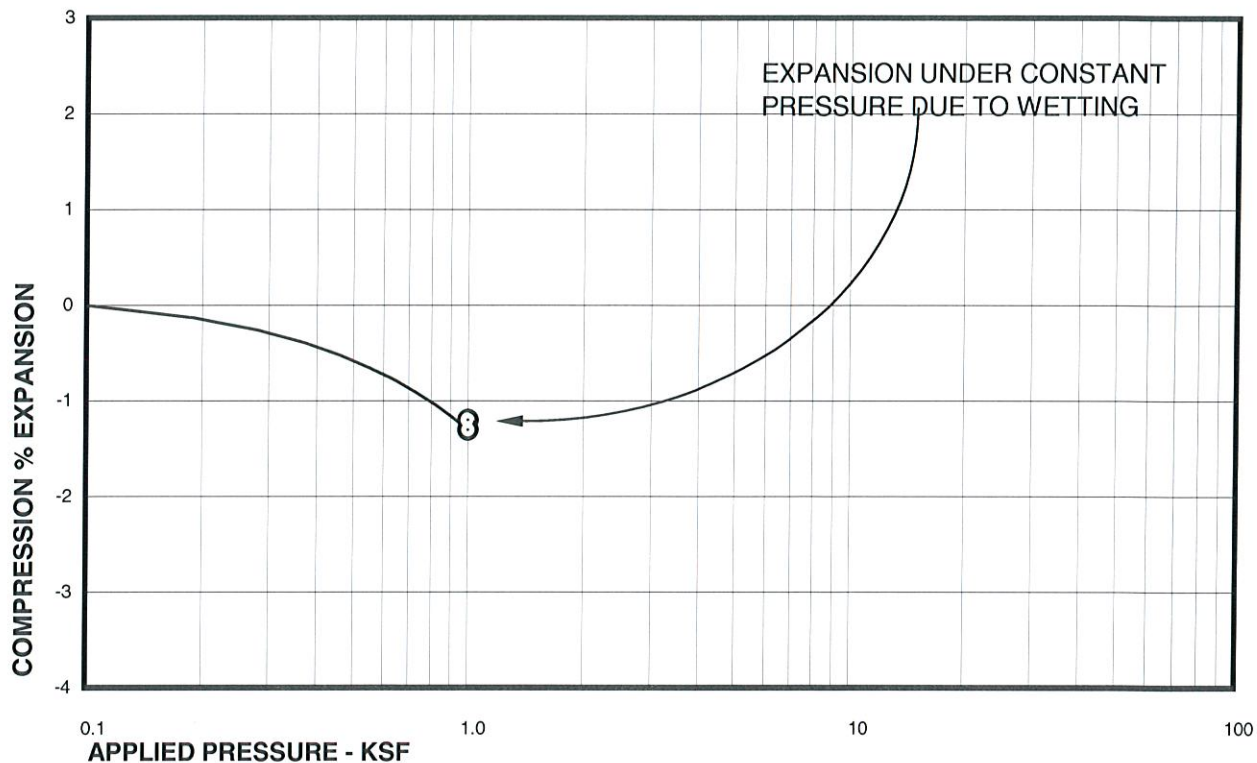
Swell Consolidation Test Results

FIG. A-1



Sample of WEATHERED CLAYSTONE
From TH-2 AT 19 FEET

DRY UNIT WEIGHT= 102 PCF
MOISTURE CONTENT= 17.8 %



Sample of INTERBEDDED CLAYSTONE/SANDSTONE
From TH-2 AT 24 FEET

DRY UNIT WEIGHT= 99 PCF
MOISTURE CONTENT= 17.9 %

Swell Consolidation Test Results



TABLE A - I

SUMMARY OF LABORATORY TEST RESULTS

BORING	DEPTH (ft)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	SWELL TEST DATA			SOLUBLE SULFATE CONTENT (%)	PASSING NO. 200 SIEVE (%)	SOIL TYPE
				SWELL (%)	COMPRESSION (%)	APPLIED PRESSURE (psf)			
TH-1	4	10.8	112		0.2	500	0.05		CLAY, SANDY (CL)
TH-1	9	5.4	109					14	SAND, SILTY (SM)
TH-1	19	12.7	116	1.6		1,000			CLAY, SANDY (CL)
TH-2	14	7.6	114					23	SAND, CLAYEY (SC)
TH-2	19	17.8	102	0.3		500	0.01		WEATHERED CLAYSTONE
TH-2	24	17.9	99	0.1		1,000			CLAYSTONE/SANDSTONE

Construction of Water Well Pump House

Addendum One: Answers to submitted questions

**All RFP, Bid, Addendum or other documents related to this RFP will be posted on the Rocky Mountain Bid System at:
<http://www.govbids.com/scripts/CO1/public/home1.asp>**

An addendum will be issued to answer submitted questions will be issued no later than December 18, 2012

*****Please Note New Bid Opening Date and Time*****

**Bid Opening
Date: December 27, 2014
Time: 12:00 p.m.
Location: 4430 South Adams County Parkway, Purchasing Offices 4th Floor,
Brighton, Colorado 80601**

***** Please Note New Completion Date *****

Project Completion Date April 15, 2013



ADAMS COUNTY

COLORADO

Adams County Bid 2013.002
Construction of Water Well Pump House
Addendum One Answers to Submitted Questions

1. **The new bid date will be December 27, 2012 at 12:00 p.m.**
 - 1.1. **Location: Adams County Government Building 4430 South Adams County Parkway, Brighton, Colorado 80601**
2. **Project Completion Date shall be changed to April 15, 2013**
3. **Retainage will be 5% per Colorado statute.**
4. **Is there a contract we can review?**
 - 4.1. **See attached Adams County Construction Agreement**
5. **Are there General and Special Conditions available to review?**
 - 5.1. **See attached**
6. **Is there an Engineer's Estimate for the work?**
 - 6.1. **Not available**
7. **Is a contractor license with Adams County required to bid and/or construct the project?**
 - 7.1. **No, for bidding, yes for construction**
8. **Item 6.10 says to quote exclusive of taxes. Does Adams County have the ability to provide a tax exempt certificate, especially with the State of Colorado? This will have to be confirmed to ultimately exclude taxes from the quote.**
 - 8.1. **This statement refers to Taxing the County. The Contractor shall pay taxes to their vendors and roll that cost into the final bid.**
9. **Would you mind clarifying Item 10.6 as it relates to the work? The statement about water lines and conduits makes it difficult to differentiate between work that will already be complete and work we will be required to perform.**
 - 9.1. **See Drawing Sheet WS-6 for clarification. All conduits and utility lines have been constructed and stubbed out to the new steel building.**
10. **Will liquidated damages be part of the contract?**
 - 10.1. **Definitely, the pump house has to be complete and fully operational by April 1, 2013.**
11. **Is a copy of the geotechnical report referenced in the drawings available for review?**
 - 11.1. **Yes, see attached.**
12. **Would the County / Engineer accept a pre-cast building in lieu of a pre-engineered metal building?**
 - 12.1. **Yes, but contractor would be responsible for all foundation design, structural design etc. Building must meet insulation requirements.**

13. Drawing WS-6 notes a 3' x 6'-8" man door, however the drawings and elevations appear to show a 6' door. Is the note incorrect? Please clarify.
- 13.1. A double door shall be provided, each door is 3'-0" x 6'-8". The primary operating door is the right door, when viewed from exterior.**
14. Regarding Drawings WS-4, will the new Barret Gas Line be complete prior to starting work?
- 14.1. Gas line relocation is complete.**
15. Would the County / Engineer accept a precast headwall shown on Drawing WS-9?
- 15.1. Yes.**
16. Drawing WS-7 has two notes regarding backfill at the tank as follows:
- 16.1. 4 oz. geotextile fabric between pea gravel and structural fill**
There is no imported structural fill over the tank. There is a 12 inch layer of pea gravel, then 4 oz. geotechnical fabric, then compacted (90% Standard Proctor) native soil to finish grade.
17. Backfill native soil to grade, compact to 90% standard proctor
- 17.1. See comment No 13 above.**
18. The drawing does not seem to illustrate any structural fill unless it is assumed the native soil is not sufficient
- 18.1. Imported structural fill is not required.**
19. Can the Engineer clarify if structural fill is really necessary and where it should be placed in relation to the pea gravel and the native backfill?
- 19.1. Structural fill is not required.**
20. Spec Section 221230 Para 3.1.H requires "flowfill to tank spring line". Plan Sheet WS-7 shows pea gravel under and around the tank. Which is correct?
- 20.1. Flowfill is not required for the tank installation. See note no 13.**
21. We assume that the materials noted on Plan Sheets E-1, E-2, E-3 are total specifications for the electrical work for the project. Since there is no specifications section of electrical, will submittals be required when the contract is awarded?
- 21.1. Electrical specifications are included on the Drawings. Electrical submittals are required, as specified in the General Notes, Drawings, Sheet E-1.**
22. Will there be any connection drawings for the SCADA for the magmeters?
- 22.1. No. The SCADA from the main facility building connects to the packaged pump skid control panel. Connections from monitored equipment, such as magmeters, connect to the packaged pump skid control panel.**
23. Will there be any specifications for the chlorine equipment other than the note on Plan Sheet WS-6?
- 23.1. No, a submittal shall be provided.**

24. Is it possible to get a copy of the geotechnical reports from CTL Thompson so that we can determine what type of soil is located in the tank and wet well areas?
24.1. Yes, it is attached.
25. Specification section 133419 para 1.11.A.2 refers to the metal panel finish warranty – what is the required length of the warranty – 10 or 20 years? It is unclear what is required.
25.1. 20 years.
26. Gracon cannot find a detail section cut for the walls or roof – is there a plywood cover on the interior of the building walls & roof?
26.1. Plywood sheathing is only required on the exterior and interior of the two metal framed Chlorination Room walls.
27. The plans refer to a standby generator, but there are no specs for the generator. The note for the base for the generator says to verify size with generator vendor. Is the generator owner furnished or contractor furnished?
27.1. It is Contractor furnished. The standby generator is a secondary source of power for the fire pump that is part of the packaged pump skid. Coordination of the standby generator sizing, etc. must occur with the packaged pump skid manufacturer. The Contractor has the option to have the standby generator provided by the packaged pump skid vendor or to provide it by another vendor, however, it is the Contractor's responsibility to provide a standby generator that is complete in place, works with the fire pump and adheres to all regulations and codes. The standby generator for the fire pump has been discussed with Cummins Rocky Mountain. There are also other vendors in the Denver area that are also familiar with the standby generator requirements for a fire pump.
28. Due to the long lead time of the tank, is it possible to move the tank and the meter vault to the north a couple feet for the slop of the tank excavation?
28.1. That may be possible but would have to be confirmed in the field with the owner's Representative once the project is staked out. The site is very limited in size due to existing utilities, roads and drives.
29. The spec book calls for a flowfill backfill of the tank but the drawings call for a pea gravel backfill. Which method of backfill do you want us to use?
29.1. Pea gravel. Flow Fill is not required. See note No 13.
30. The drawings or the spec book don't call out for any tank hold downs, is any required?
30.1. None required except during installation and backing per manufactures recommendation.
31. I got a delivery time of 10-12 weeks after the receipt of approved drawings for the tank. I'm still waiting on the lead time for the pump skid. The contract is only 3 months long, is there going to be a time extension on this project?
31.1. No. The facility is scheduled to open on April 1, 2013.
32. Spec Section 221230 Para 3.1.H requires "flowfill to tank spring line". Plan Sheet WS-7 shows pea gravel under and around the tank. Which is correct?

32.1. Pea gravel only. Flow fill not required. See Note No 13.

33. We assume that the materials noted on Plan Sheets E-1, E-2, E-3 are total specifications for the electrical work for the project. Since there is no specifications section of electrical, will submittals be required when the contract is awarded?

33.1. Submittals are required. See Sheet E-1 General Notes.

34. Will there be any connection drawings for the SCADA for the magmeters?

34.1. No. All SCADA connections are through the packaged pump skid control panels.

35. Will there be any specifications for the chlorine equipment other than the note on Plan Sheet WS-6?

35.1. No.

36. Is it possible to get a copy of the geotechnical reports from CTL Thompson so that we can determine what type of soil is located in the tank and wet well areas?

36.1. Will be provided.

37. Specification section 133419 para 1.11.A.2 refers to the metal panel finish warranty – what is the required length of the warranty – 10 or 20 years? It is unclear what is required.

37.1. 20 years.

38. Gracon cannot find a detail section cut for the walls or roof – is there a plywood cover on the interior of the building walls & roof?

38.1. No. There is plywood sheathing only on the two framed walls for the Chlorination Room.

39. The plans refer to a standby generator, but there are no specs for the generator. The note for the base for the generator says to verify size with generator vendor. Is the generator owner furnished or contractor furnished?

39.1. Contractor furnished. See other responses to questions and Note No 24.

40. Are we to use the same doors spec's for the metal building on the chlorination room? Or if you can provide a door spec and a door schedule.

40.1. Yes you can or you can provide a standard commercial grade metal door.

41. Sheet WS-6, I just want to confirm, do both the well water line and the 4" PVC waterline end 5' from the pump house?

41.1. Existing piping and conduits from well and facility building, which the contractor will connect to as part of this project, have been constructed and are located approximately 5 ft. away from the proposed pump house building.

42. What size is the existing well water line? The notes say to install a 1.5" dresser coupling, and then they say to install a 1.5" x 2" SCH 40 reducer.

42.1. It is 1.5 inches PE pipe. The reducer should not be required as the pipe run to the storage tank, and associated valves, are 1.5 inch.

43. Is the well line from the existing to the tank SDR 9 polyethylene or is it SCH40 PVC pipe? Sheet WS-6 calls out SCH40 PVC but sheet WS-7 says “connect 1-1/2” diameter HDPE well supply pipe w/dresser coupling”.
- 43.1. The existing piping from the well to approximately 5 ft. from the pump house building is 1.5 inch PE. Connection of this pipe to the storage tank via an equipment manhole/vault can be made with PVC or PE pipe.**
44. On sheet WS-9, the model number for the Tideflex check valve appears to be incorrect. Does it need to be a model TF-2 slip on check valve?
- 44.1. Whatever model meets the application of providing a flapper valve that is in a normally closed position and readily opens with a minimum of pressure.**
45. Does the Chlorination room ceiling need to be framed and sheathed similar to the walls?
- 45.1. No. Ceiling in this room is same as ceiling in rest of building.**
46. Drawing WS-7; The elevation shown for “Bottom Tank Bedding EL.=5299.00” appears to be incorrect. Please confirm if that elevation should be 5229.00.
- 46.1. Yes, the elevation indicated should be 5229.00**
47. Is there a soils report available? We need to know what type of material we will be excavating and if dewatering will be required.
- 47.1. Yes, is provided.**
48. Is the contractor responsible for any work associated with the existing or new gas line; i.e. removal of existing 2” steel gas line where it intersects the underground storage tank?
- 48.1. If the abandoned gas line is in the way of any excavations for this project it should be removed. It is our understanding that Bill Barrett has removed the abandoned line when they installed the new line.**
49. Will the New Bill Barret Gas Line be installed and in service during the construction of this project?
- 49.1. It is already installed and in use.**
50. Who is responsible for locating the new gas line?
- 50.1. The contractor is responsible for locating all underground utilities. Bill Barrett Gas Co will perform the utility locates.**
51. Bracing along South side wall requires a portal frame. In order to clear the overhead door an eave height of 11’-0” is required; 10’-0” does not provide enough clearance. Is 11’-0” acceptable?
- 51.1. Yes.**
52. Spec 1.11 Warranty, B. Special Weather tightness Warranty of 20 years is not available with the roof and wall panel E. Manufacturers, Rigid Global Buildings RHR-9000 series. This panel is a high rib through panel fastener design. No PEMB manufacturer offer a weather tightness warranty with this type panel. Please choose to delete the weather tightness warranty requirement or specify a standing seam roof panel with fiberglass batt insulation or a standing seam roof insulated sandwich panel.

52.1. This statement conflicts with information received and discussed with Rigid Global Buildings.

53. Gutters and trim for roof and wall panels will be provided in 24ga steel material. Is this acceptable?

53.1. Yes.

54. Spec 3.7 Thermal Insulation Installation B. Blanket Roof and C. Blanket Wall refer to fiberglass batt insulation. Confirm that these materials are to be installed **in addition** to the R-14 rated insulates metal sandwich roof and wall panels.

54.1. There is no batt insulation required.

55. Sheet Number WS-8; Valve/Meter Vault Detail seems to indicate (2) two valves (1 check valve and 1 gate, butterfly or ball valve) on the 4” Sch 40 overflow pipe, however only one of the valves has a callout “4” PVC Flapper Check Valve”. Please clarify if two different valves are required on the 4” overflow line inside of the valve/meter vault.

55.1. The overflow pipe has a check valve and gate valve as shown in the Drawings detail. The gate valve is shown as a symbol.

56. Sheet WS-6 has a callout stating that the 4” PVC Flapper Check Valve located inside of the valve/meter is to be provided by the tank manufacturer. Please confirm if this is accurate. We have already received a quote for the tank and the manufacturer is not providing that valve.

56.1. The valve can be provided by the tank vendor of a separate vendor.

57. The RFP for the Flatrock pump station states (2) copies of a contractor’s bid are to be submitted. At the end of the RFP document (section 11), it states four references are to be provided for similar projects from the past 5 years. Are these references to be provided with signed and sealed bids at the bid opening?

57.1. Only two copies are required and the references are to be part of the contractor’s submittal.

58. Sec.133419, 1.4, A,4 – “Metal Liner Panels” – Are there additional besides what’s in the Insulated Metal Panels, where?

58.1. No.

59. Sec. 133419, 1.5, C, k & 1.7, A – AISC Category MB has been defunct since 2009. Braemar Buildings are manufactured in IAS AC 472 Certified factories. Will this be enforced (seeattached)?

59.1. Metal building manufacture shall be IAS AC 472 certified or have been a AISC category MB at time of program termination and in the process of becoming IAS AC 472.

60. Sec. 133419, 1.5, D - Braemar Buildings has no dealerships or factory authorized erectors. What should the Erector Certificates state?

60.1. Certificate shall certify that the building is erected in accordance with the manufactures requirements.

61. Sec. 133419, 1.11, B – What type and reimbursement level is required for the Weathertightness Warranty (see attached)?
61.1. Owner satisfaction up to full replacement.
62. Sec. 133419, 2.1, B – Is there a contact, process, due date, and specific submittal to be an authorized PEMB manufacturer?
62.1. Approval will need to be authorized by the owner.
63. Can Braemar Buildings be an authorized PEMB Manufacturer (see attached Approval Letter, Color Cards, Brochure)?
63.1. Braemar Building is approved by the owner.
64. Sec. 133419, 2.3, 3, a – Lateral Drift – 1 / 400 is extreme for an unoccupied Pump House. Would L / 180 or L / 200 be allowed?
64.1. Changing the drift limit from L/400 to L/160 would increase building drift from 0.3" to 0.75" and could impact the doors. The base bid will be for the drift limit of L/400 but if submitted an deduct alternate will be reviewed for a drift limit of L/160.
65. Sec. 133419, 2.3, H vs. 2.5, all – Are “...insulated metal panel assemblies...” allowed or” Foam Insulation Core Metal Roof and Wall Panels”?
65.1. Panels are a sandwich of two metals panels with a foam core.
66. Sec. 133419, 2.6, all – Can L M Curbs be an alternate roof hatch supplier; WWW.LMCURBS.COM ?
66.1. If they are equal to that which was specified.
67. Sec. 133419, 2.7, B – PEMB Manufacturers’ standard doors don’t fit in Insulated Metal Panels – by others?
67.1. There are metal building suppliers that also supply exterior doors.
68. Sec. 133419, 2.9, G – Where are the Louvers / dimensions?
68.1. See sheet M1 for Lover locations and dimensions.
69. Sec. 133419, 3.7, all – Where is additional Thermal Insulation?
69.1. There is none required.
70. Sheet S0.1, Design Criteria1A – “International Building Code 2006 vs. Commerce City Design Criteria; 2009 International Building Code. Which?”
70.1. This site is in unincorporated Adams County not Commerce City. Adams County utilized the International Building Code 2006.
- 70.2. 6B – “Ground Snow Load = 30 PSF vs. Commerce City Design Criteria; 25 p. s. f. Which?”
70.2.1. The Ground Snow load is 30 psf per Adams County building department’s Terry Ingalls
- 70.3. Sheet S1.0, Det. 2 – “THREADED ROD BRACING” – Is cable bracing allowed?

70.3.1. Cable is not acceptable.

70.4. Sheet WS – 5, South Elevation – Can the roof ridge be spun perpendicular to design, fitting doors under a Rigid Frame, and avoiding torsional / portal framing?

70.4.1. Yes but see drift response per item No 61

70.5. Sheet S2.0, Det. 2 – “...AND ANCHOR BOLTS BY METAL BUILDING MANUFACTURER” They are specifically excluded by PEMB Manufacturers who only engineer from the slab up.

70.5.1. See response below for No 67.6.1

70.6. Anchor Bolt type and depth would be determined by the Foundation Engineer. The foundation is poured before the building package arrives and would be too late for anchor bolts to arrive at that time. By others?

70.6.1. Foundation information is shown on the contract bid documents. Anchor bolts are to be designed and detailed by PEMB manufacture in accordance with ACI 318 (and AISC) and then submitted for approval by building engineer of record. Contractor to establish who supplies and installs the bolts. Anchor bolts shall be headed and imbedded a minimum of 18" into the concrete foundation.

71. What type of feed cable needs to be installed for the telecommunications

71.1. The County SCADA software is given in the packaged pump skid specifications.

72. What type of motion sensor needs to be in place

72.1. Standard commercial grade to detect motion at the entry points of the building.

73. Will there be electrical / low voltage spec sections.

73.1. No.

74. Please provide the Soils Report.

74.1. Is provided.

75. Please provide Specification for the generator.

75.1. None will be provided. See response to item number 24.

76. Will the primered steel for the pre-engineered building require finish coating or just touch-up of the primer?

76.1. If this is in referral to structural members, commonly referred to as “red steel”, there is no additional finish required.

77. Spec section 221230 pg.6 para.H calls out flowfill to spring line, Dwg. WS-7 just shows pea gravel.

77.1. See response for item No 13.

78. The spec. indicates completion date of April 1. I don't think this date can be met based on the anticipated ship dates for the Flowtronex system and the fiberglass tank. I don't know about the building, ATS, and generator.

78.1. The facility is scheduled to open April 1, 2013.

79. What is the anticipated Award date?

79.1. Final approval from the Board of County Commissioners will occur on January 7, 2013.

80. Spec section 011210 pg. 25 para. 3.8 A asks for an optional additional 4 yr. warranty to be included in the bid. Will this be a separate line item?

80.1. If it can be provided then add it in a statement attached to your bid.

81. See attached Flowtronex scope. They seem to have taken numerous exceptions and clarifications which affect the design of this system. Please clarify.

81.1. The County and Engineer are unaware of this issue. See other responses.

82. Will the project be awarded on the Base Bid with the Flowtronex Pumping Equipment or will the award be based on Alternates? If there are Alternate Pumping Equipment quotes where do we show these on the Bid Form?

82.1. The packaged pumping equipment can be provided by any vendor as long as it meets the layout, pump demands, process design, level of controls and all applicable standards and codes. Show on Bid Form where provided.

83. Spec section 011210 pg. 10 para. C indicates the pump cans are to be steel fabricated units. Sheet SW – 9 indicates precast concrete. Precast will be quicker delivery. I don't believe precast manhole risers are available in 36" and 30" diameters. Are 48" acceptable?

83.1. It is assumed that "pump cans" refers to the wet well risers under the pumps. These shall be precast reinforced concrete. These are available in the Denver area in the sizes specified.

84. Are the following documents available:

84.1. Owner-Contractor Agreement

84.1.1. A copy of the Owner's contract is attached

84.2. General Conditions

84.2.1. See attached contract

84.3. Supplemental Conditions

84.4. See attached contract

84.5. Payment Bond and Performance Bond forms

84.5.1. Your bonding company's standard form is acceptable or AIA

85. Is there a special Bid Bond form to be used for this Bid?

85.1. Your bond company's form is acceptable

86. Are there Liquidated Damages?

86.1. Yes see attached sample construction agreement

87. Is the Warranty period one year?

87.1. One year from date placed in service unless specified otherwise for some materials and finishes.

88. Electrical Drawing E2, Detail Note '12' says to "PROVIDE INTRUSION DETECTION ALARM SYSTEM WITH ONE MOTION SENSOR. IT IS ANTICIPATED THAT SYSTEM WILL TIE INTO CAMPUS SECURITY SYSTEM. COORDINATE EXACT REQUIREMENTS WITH OWNER PRIOR TO INSTALLATION." Does the Intrusion Detection System require a MOTION SENSOR as well as the CAMERA noted on the PUMP HOUSE ELECTRICAL PLAN. Please provide the manufacturer, type and model of equipment required to match existing system. **Motion sensor is all that is required. A camera is not required.**

88.1. Is there an established system to TIE into? Is there an existing Spare conduit connected to the existing Security panel that can be used for the TIE in.

88.1.1. Yes. The existing software is provided in the packaged pump skid specifications. The conduit from the facility building to the pump house building already exists and is shown multiple times in the Drawings.

88.2. Drawing E2 Detail Notes 9 and 5 call for conduits. Detail Note 5 is for Telecomm Wiring. Is there a D Mark location this conduit extends to or is this just a stub out as indicated?

88.2.1. Underfloor conduits shall be provided for a number of appurtenances. Conduits will stub up above the floor inside the pump house building at various locations, depending on the application. All conduits provided are expected to be utilized. There are no stub outs for future use.

88.3. Detail Note 9 says to extend to existing conduit Stub location. Is there a layout drawing that shows this location?

88.3.1. All existing piping and conduits are located approximately 5 ft. from the proposed pump house building as shown in the Drawings.

89. There is no site grading plan for this project included in the bid package. Will the County be issuing a grading plan with the addendum?

89.1. The site has been graded to the extent it will be. There is not a specific site grading plan for this Bid.

90. There is no soils report for the site included in the bid package. Will the county be supplying any additional soils information with the addendum?

90.1. Yes.

91. The bid information does not include a Soils and Erosion Control plan. Will the County be supplying a Soils and Erosion Control Plan to prepare a bid from?

91.1. The County has a SWMP Permit issued from CDPHE for the entire project site. The contractor needs to provide BMP for his site which will probably be just a silt fence. The contractor will also need to seed and mulch any disturbed area adjacent to the building site. The seeding mix design and notes are attached.

92. Under Grading Notes: " 1.) Excess material can be wasted adjacent to the building as approved by the Engineer. Grade area for drainage and then top soil and seed". A significant amount of material will be generated by the excavation of the storage tank.

92.1. Is there an area where this material can be spread out and wasted onsite?

92.1.1. Yes. This is a very large 400 acre site of which over 100 acres has been disturbed is in phase 1. This area can be near the pump house but will be coordinated with the Owners Representative.

92.2. Can this area be shown on the grading plan?

92.2.1. This is not a grading plan. It would be located onsite.

92.3. If not can the material be stockpiled onsite and where?

92.3.1. That will be determined but it will be onsite.

93. The information on the generator and the ATS is limited to Note 7 on Sheet E2: "ATS and Generator to be furnished by pump skid vendor, installed by the EC. Coordinate exact requirement with GC prior to rough-in" and the "40KW Diesel Generator".

93.1. Specification Section 26 should contain the information required to adequately bid this item. Is the County going to issue Specification Section 26 or supply more information on these items?

93.1.1. See response No 24. Vendors are able to bid these items with the information given.

93.2. The same notes indicate the generator is to be supplied by the pump skid manufacturer. Normally the generator is supplied by the electrical contractor or the general contractor. Is this acceptable?

93.2.1. The Contractor has the option to use any vendor.

94. The project documents indicate that the skid design is based on a Flowtronex Skid. We are in receipt of a scope of supply from Flowtronex which includes 21 deviations or exceptions to the Engineer's specification. This seems atypical when the supplier is the basis of design. Is the County and/or Engineer aware of these and willing to accept the deviations?

94.1. The County and the Engineer are unaware of these exceptions. Deviations from the basis of design, by any vendor, shall not affect the original design layout, shall meet the given supply and fire demands, and shall comply with all applicable codes.

95. Among the deviations, Flowtronex will not supply the Automatic Transfer Switch or Backup Generator as noted in the project documents. Based on this exclusion, we would need to procure the generator and ATS from a separate vendor and require a specification for this equipment. Can you provide the specification?

95.1. See response No 24. This project has been discussed with Cummins Rocky Mountain. There are also other vendors in the area experienced with supplying the necessary transfer switch and standby generator that must meet fire codes.

96. Also, please note that if the specification is provided on the 18th, it typically takes at least seven or eight business days to obtain a quote for these items. Can the bid date be extended to accommodate for this?

96.1. The new bid date will be December 27, 2012 at 12:00

96.2. Location: Adams County Government Building 4430 South Adams County Parkway, Brighton, Colorado 80601

97. Project Completion Date shall be changed to April 15, 2013

PERMANENT DRILL SEEDING MIX

Species	Variety	Notes	% in Mix	PLS#/AC
Big Bluestem	Kaw	PNWS	10	1.1
Yellow Indiangrass	Cheyenne	PNWS	10	1
Switchgrass	Blackwell	PNWS	10	0.4
Sideoats Grama	Vaughn	PNWB	10	0.9
Western Wheatgrass	Arriba	PNCS	10	1.6
Blue Grama	Hachita	PNWB	10	0.3
Thickspike Wheatgrass	Critana	PNCS	10	1
Prairie Sandreed	Goshen	PNWS	10	0.7
Green Needlegrass	Lodorm	PNCB	10	1
Slender Wheatgrass	Pryor	PNCB	5	0.6
Streambank Wheatgrass	Sodar	PNCS	5	0.6

Flatrock

- NOTES:
- P = PERENIAL
 - A = ANNUAL
 - N = NATIVE
 - I = INTRODUCED
 - W = WARM SEASON
 - C = COOL SEASON
 - S = SOD FORMER
 - B = BUNCHGRASS

I SEED QUALITY

A. ALL BRANDS FURNISHED SHALL BE FREE FROM SUCH NOXIOUS SEEDS AS RUSSIAN OR CANADIAN THISTLE, COURSE FESCUE, EUROPEAN BINDWEED, JOHNSON GRASS, Knapweed, and leafy spurge.

THE SUBCONTRACTOR SHALL FURNISH TO THE CONTRACTOR A SIGNED STATEMENT CERTIFYING THAT THE SEED FURNISHED IS FROM A LOT THAT HAS BEEN TESTED BY A RECOGNIZED LABORATORY. SEED THAT HAS BECOME WET, MOLDY, OR OTHERWISE DAMAGED IN TRANSIT OR IN STORAGE, WILL NOT BE ACCEPTABLE.

II MATERIALS

- A. SEED (DRILLED ONLY - NO HYDROSEED)
- 1. SEED TYPE AND AMOUNT OF PURE LIVE SEED (PLS) REQUIRED PER ACRE SHALL BE PER TABLE.
- 2. IF THE SEED AVAILABLE ON THE MARKET DOES NOT MEET THE MINIMUM PURITY AND GERMINATION PERCENTAGES SPECIFIED, THE SUBCONTRACTOR MUST COMPENSATE FOR A LESSER PERCENTAGE OF PURITY OR GERMINATION BY FURNISHING SUFFICIENT ADDITIONAL SEED TO EQUAL THE SPECIFIED PRODUCT. THE TAGS FROM THE SEED MIXES MUST BE SUPPLIED TO THE CONTRACTOR.
- 3. THE FORMULA USED FOR DETERMINING THE QUALITY OF PURE LIVE SEED (PLS) SHALL BE $(\text{POUNDS OF SEED}) \times (\text{PURITY}) \times (\text{GERMINATION}) = \text{POUNDS OF PURE LIVE SEED (PLS)}$.

B. MULCH

- 1. ALL AREAS SHALL BE SEEDED WITHIN THIRTY (30) DAYS FROM THE DATE THE EROSION CONTROL PERMIT IS ISSUED.

HAY OR STRAW MULCH: AFTER SEEDING HAS BEEN COMPLETED, A RATE OF 4,000 LBS. (2 TONS) OF HAY OR STRAW PER ACRE SHALL BE APPLIED UNIFORMLY.