Gaithersburg
A CHARACTER COUNTS! CITY

City of Gaithersburg

31 South Summit Avenue, Gaithersburg, Maryland 20877

REQUEST FOR BIDS

No. 2016-024

HI-ARCH GAMBREL SALT STORAGE BUILDING

Solicitation Issued:	February 26, 2016		
Bid Submissions Due:	March 31, 2016	**Time:**	12:00 PM
Submissions Received By:	Sean Stevens, Public Works Operations Administrator City of Gaithersburg Department of Public Works 800 Rabbitt Road Gaithersburg, Maryland 20878		

MAYOR
Jud Ashman

COUNCIL MEMBERS
Henry Marraffa, Jr.
Michael Sesma
Neil Harris
Robert Wu
Ryan Spiegel

CITY MANAGER
Tony Tomasello

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SECTION 1: Definitions

Bid Proposal: "Bid Proposal" means the offer and any and all documents submitted to the City by a Bidder in response to this Solicitation.

Bidder: "Bidder" means the Person submitting a Bid Proposal in response to this Solicitation.

City: "City" means the City of Gaithersburg, Maryland, a municipal corporation of the State of Maryland.

City Manager: "City Manager" means the City Manager of the City or his or her designee.

Contract: "Contract" means the binding agreement awarded pursuant to this Solicitation, if any.

Contractor: "Contractor" means the Bidder awarded the Contract.

Lowest Responsive Bid Proposal: "Lowest Responsive Bid Proposal" means the Bid Proposal accepted by the City, which offers the lowest total price, including alternates if awarded, and that fully conforms in all material respects to the requirements of this Solicitation, all form and substance included.

Person: "Person" means any individual, or association or business recognized by law.

Price Analysis: "Price Analysis" means the examination of the Bid Proposal Price to ensure it is fair and reasonable.

Procurement Webpage: "Procurement Webpage" means the webpage on the City's website dedicated to procurement: http://www.gaithersburgmd.gov/government/procurement/current-bids.

Project Manager: "Project Manager means the City employee assigned to the Contract and Project.

Responsible Bidder: "Responsible Bidder" means a Bidder: who meets all of the minimum qualifications specified in this Solicitation; and who is fully capable to and able to evidence its ability to provide the Services under the Contract.

Services: "Services" means the goods and/or services to be provided to the City by the Contractor under the Contract as described in this Solicitation.

Solicitation Documents: "Solicitation Documents" mean this Solicitation and any and all documents issued and/or used by the City to solicit Bid Proposals, including but not limited to: addendums, amendments, forms and specifications.

Solicitation Schedule: "Solicitation Schedule" refers to the events and dates and times thereof specified in Section 3.1 of this Solicitation.

Solicitation: "Solicitation" means this Request for Bids.

Submission Deadline: "Submission Deadline" means the date and time, specified in Section 3.1 of this Solicitation, in which all Bid Proposals shall be submitted to and received by the City.

Substantial Completion: "Substantial Completion" means the stage in the progress of the work when the work is sufficiently complete in accordance with the Contract documents so that the City can occupy or utilize the work for the purposes which it is intended without interference from Contractor or its activities in completing the remaining work.

~ END OF SECTION 1 ~

SECTION 2: Introduction and Notices to Bidders

2.1. INTRODUCTION

The City is seeking sealed bid proposals to secure the services of a qualified and experienced contractor to design and build a 2600 Ton Capacity Hi-Arch Gambrel Salt Storage Building ("Salt Shed") at its public service facility located at 800 Rabbitt Road, Gaithersburg, Maryland 20878 ("Site").

2.2. CITY'S LIABILITY

This is a Solicitation only and not a contract. The City shall assume no obligation to pay or reimburse any Person for any costs, fees, or expenses incurred in preparation of a response to this Solicitation, or for any meetings and/or travel costs related to such response. The City reserves the right to reject any or all Bid Proposals in full or in part and/or to waive any technicalities and/or informalities as best may serve the interests of the City. The City is under no obligation to any Bidder until a contract is executed for the Services described herein.

2.3. AUTHORITY TO DISTRIBUTE SOLICITATION DOCUMENTS

The City is the sole entity with the authority to issue and/or distribute any Solicitation Documents and/or information related thereto. Any and all Solicitation Documents obtained from any source other than the City may be incomplete or incorrect. The City assumes no responsibility for any error, omission or misinterpretation resulting from the reliance or use of any Solicitation Documents not both issued and distributed by the City. Any and all Solicitation Documents shall be posted on the Procurement Webpage.

2.4. ACCEPTANCE

The submission of a Bid Proposal shall constitute acknowledgement and acceptance by the Bidder of the requirements, specifications and terms and conditions specified herein.

2.5. RESTRICTED DISCUSSIONS

Bidders are prohibited from discussing this Solicitation or any part thereof with any employee, agent, or representative of the City except as expressly authorized herein. The City may, in its sole discretion, reject the Bid Proposal submitted by any Bidder who is in violation of this provision. Any and all verbal statements and/or answers to questions relative to this Solicitation shall not be considered binding, valid or enforceable.

2.6. STATE OF MARYLAND BID AND CONTRACT REQUIREMENTS

A. Bidders must be qualified to bid in the State of Maryland in accordance with §16-202 and §16-203 of the State Finance and Procurement Article of the Annotated Code of Maryland.

B. To enter into any contract with the City, Bidders must be in compliance with the State of Maryland Code of Regulations Title 21, State Procurement Regulations.

2.7. ADA REQUIREMENTS

Individuals with a disability, who would like to receive the information in this Solicitation in another form, may contact the City's Procurement Manager by phone at 301-258-6320 or by email at wrhodes@gaithersburgmd.gov.

~ END OF SECTION 2 ~

SECTION 3: Solicitation Schedule and Information

3.1. SOLICITATION SCHEDULE

Below is the schedule of events for this Solicitation. The City reserves the right to modify the Solicitation Schedule at any time as best may serve the interests of the City; any and all modifications shall be made by addendum or amendment and posted on the City's Procurement Webpage. Unless otherwise specified, all references herein to times of day shall be Eastern Time (daylight or standard, as applicable).

EVENT	DATE	TIME
A. Solicitation Issued:	**February 26, 2016**	**N/A**
B. Pre-Submission Meeting and Site Visit: *See Subsection 3.2 for additional information*	**March 9, 2016**	**at 9:00 AM**
C. Bidder Questions Due in Writing: *See Subsection 3.3 for additional information*	**March 18, 2016**	**by 3:00 PM**
D. City's Answers to Questions Issued: *See Subsection 3.4 for additional information*	**March 24, 2016**	**by 5:00 PM**
E. Submission Deadline: *See Subsection 4.2 for additional information*	**March 31, 2016**	**by 12:00 PM**
F. Public Bid Opening: *See Subsection 4.2 for additional information*	**March 31, 2016**	**at 12:00 PM**

3.2. PRE-SUBMISSION MEETING AND SITE VISIT

A. There will be a mandatory Pre-Submission Meeting and Site Visit ("Meeting and Site Visit") at the location shown below on the date and at the time specified in the Solicitation Schedule.

City of Gaithersburg
Department of Public Works
800 Rabbitt Road
Gaithersburg, Maryland 20878

B. Attendance of the Meeting and Site Visit is mandatory; as such, Bidders that do not attend the entire Meeting and Site Visit shall not be qualified for award of the Contract. In addition, Bidders are expected to bring a copy of all the Solicitation Documents as the City will not provide any copies of the same.

3.3. SUBMISSION OF BIDDER QUESTIONS

All questions regarding this Solicitation: (i) shall be submitted by email to Sean Stevens, Public Works Operations Administrator, at sstevens@gaithersburgmd.gov; and (ii) shall be received by the date and time specified in the Solicitation Schedule. Any and all questions received not in compliance with this paragraph will not be answered unless the City, at its sole discretion, deems that a response to a question is necessary to clarify anything in the Solicitation Documents.

3.4. CITY'S ANSWERS TO BIDDER QUESTIONS

The City's answers to questions submitted by Bidders will be posted by addendum on the City's Procurement Webpage on the date specified in the Solicitation Schedule.

~ END OF SECTION 3 ~

SECTION 4: Bid Proposal Preparation and Submission Instructions

4.1. BID PROPOSAL PREPARATION

In order to provide each Bidder with an equal opportunity for consideration, adherence to a standardized bid proposal format is required; any Bid Proposal submitted outside of the required format shall be cause for the Bid Proposal to be rejected as non-responsive. All Bid Proposals shall include the following material and be organized into sections as follows:

A. Statement of Qualifications

This Section of the Bid Proposal shall contain a Statement of Qualifications ("SOQ"), which shall include the following information organized as follows:

I. Business Profile

This Section of the SOQ relates to the Bidder's business profile and shall include:

- The legal name of the business and, if applicable under this Solicitation, the trade name of the business;
- The type of business (i.e. corporation, limited liability corporation or company, partnership, etc.);
- The state where the business is domiciled (formed);
- The location of the principle office and any and all branch office(s);
- The nature of the business; and
- The geographical area(s) serviced by the business.

II. Capability and Qualifications

This Section of the SOQ shall describe the capabilities and qualifications of and the resources available to the Bidder to provide the Services (not more than two [2] pages in length). The Bidder shall have a minimum of five (5) years of experience in providing services similar or greater in scope and cost to those under this Solicitation.

III. Safety, Professional Development and Quality Control Programs

This section of the SOQ relates to the Bidder's safety, professional development, and quality control Programs, and shall include and describe (not more than three [3] pages in length):

- The Bidder's training programs, such as management, OSHA and technical training programs.
- Any and all of the Bidder's quality control measures.

IV. Financial Wellness

This Section of the SOQ relates to the Bidder's financial wellness and shall include a letter of recommendation from a financial institution that attests whether the Bidder is financially responsible to provide the Services.

V. References
This Section of the SOQ shall include the contact information of three (3) customers to use as references. Each reference shall be for projects completed by the Bidder in the last five (5) years, which are similar in size and scope to the project hereunder.

VI. Subcontractors
This Section of the SOQ shall include a separate SOQ for any and all subcontractors hired by the Bidder to provide any of the Services under this Solicitation.

VII. Construction Plan
This Section of the Bid Proposal shall include a project duration schedule (installation schedule) and phase plan, a schedule of values, construction progress reporting methods and simple elevation drawings of what the building will look like.

VIII. Maintenance and Warranty Information
This Section of the SOQ shall include maintenance information and a list of all standard and manufacturer's warranties.

B. Forms and Documents
This Section of the Bid Proposal shall include the following documents and forms:

I. Addendum and Amendment Acknowledgement Form
II. Affidavit of Qualification to Bid
III. Bid Form
IV. Conflict of Interest Certification
V. Litigation and Lien Information
VI. Executed Bid Bond

Forms I-V above are incorporated herein and attached hereto as Attachment A.

C. Bid Proposal Price
This Section of the Bid Proposal shall include a completed and signed Bid Form, which includes requested alternate pricing. The Bid Form is included in Attachment A.

4.2. BID PROPOSAL SUBMISSION

The Bidder shall submit complete sets of its Bid Proposal in a sealed package ("Bid Proposal Package") in accordance with and subject to the following instructions and conditions:

A. The Bid Proposal Package shall contain two (2) original complete paper Bid Proposals. All documents and forms shall be completed in their entirety and, where applicable, be notarized and/or signed in ink by an authorized or duly authorized representative of the Bidder.

B. The following information shall be printed clearly on the outside of the Bid Proposal Package:

- Solicitation Number;
- Solicitation Title; and
- Name of the Bidder submitting the Bid Proposal Package

C. The Bid Proposal Package shall be submitted by the Submission Deadline and to the person and at the location shown below. Bid Proposals shall also be publicly opened and read aloud at the same location and on the date and at the time specified in the Solicitation Schedule.

Sean Stevens, Public Works Operations Administrator
City of Gaithersburg
Department of Public Works
800 Rabbitt Road
Gaithersburg, Maryland 20878

Any and all Bid Proposals not received by the City by the Submission Deadline and/or that are not submitted at the above location shall be deemed non-responsive.

D. The City shall assume no responsibility for delays or errors in the delivery of any Bid Proposal; postmarking by the Submission Deadline shall not substitute for actual receipt.

E. The Bidder is strictly prohibited from submitting its Bid Proposal by facsimile or by e-mail. Any and all Bid Proposals submitted as such shall be rejected as non-responsive and be removed from consideration.

F. Any and all Bid Proposals submitted not in compliance with any of the provisions herein shall be rejected as non-responsive and be removed from consideration.

~ END OF SECTION 4 ~

SECTION 5: General Terms and Conditions

The following terms and conditions shall apply to and survive this Solicitation and be incorporated into the Contract:

5.1. HEADINGS

Any and all of the headings contained in any of the Solicitation Documents are for reference purposes only and shall not in any way affect the meaning or interpretation of any of the same.

5.2. ACCEPTANCE AND REJECTION OF BID PROPOSALS

The City reserves the right: (i) to accept or reject any or all Bid Proposals in whole or in part; (ii) to waive any technicalities or informalities in Bid Proposals; and (iii) to cancel or postpone this Solicitation at any time if determined to serve the best interests of the City. The City may reject the Bid Proposal of any Bidder in arrears or in default to the City on any contract, debt, or other obligation.

5.3. ACCURATE INFORMATION

The Bidder certifies that all information provided or to be provided to the City is true and correct and may be relied upon by the City in awarding the Contract. Any false and/or misleading information is cause for the City to reject the Bidder's Bid Proposal or to terminate the Contract if awarded to the Bidder. Such rejection or termination shall relieve the City of any direct or consequential damages or costs incurred by the Bidder.

5.4. ADDENDA AND AMENDMENTS

In the event any addenda or amendments are issued to this Solicitation, all the terms and conditions of this Solicitation shall govern and apply unless specifically stated or modified in any such addenda or amendments. Any and all written communication not posted on the Procurement Webpage relative to this Solicitation, shall not be considered binding, valid or enforceable. It is the responsibility of the Bidder to inquire about and obtain any and all addenda and/or amendments issued, all of which shall be published on the City's Procurement Webpage.

5.5. ALTERNATE BID PROPOSALS

The Bidder is expected to clearly respond to the requirements set forth in this Solicitation. Any and all alternate Bid Proposals for the Services shall be rejected as non-responsive and shall be removed from consideration.

5.6. BINDING BID PROPOSAL

All Bid Proposals shall remain binding for 180 calendar days following the Submission Deadline; Bid Proposals may not be withdrawn at any time within this period. In the event an award is not made during such period, all Bid Proposals shall be automatically extended and remain binding for an additional 180 calendar day period. Bid Proposals shall automatically be renewed until such time as either an award is made or proper notice is given to the City by a Bidder of its intent to withdraw its Bid Proposal. Bid Proposals may only be withdrawn by written notice to the City at least fifteen (15) calendar days prior to the expiration of the then current 180 calendar day period.

5.7. CONFIDENTIALITY

A. The City agrees, to the extent permitted by law and in accordance with the terms set forth in this Solicitation, to hold all confidential information and material belonging to the Bidder in strictest confidence. The Bidder shall specify in writing to the City the information and/or material the Bidder deems to be a trade secret or other confidential information and/or material. Written notification shall also contain the reason such information and/or material is considered to be a trade secret and/or confidential.

B. The Bidder agrees that all knowledge and information it may receive from the City or from its officials, employees or other sources, or by virtue of the performance of Services under and pursuant to the Contract, if awarded the Contract, which are included or referenced in Title 4 of the General Provisions Article of the Annotated Code of Maryland, shall not be directly or indirectly disclosed to any person whatsoever unless authorized to do so by the City Manager. This confidentiality provision shall also apply to any information, activity, or record designated by the City as being "confidential" or "privileged".

5.8. CONTRACT AWARD

A. It is the intent of the City to award the Contract to one (1) Bidder. The City reserves the right to award the Contract to multiple Bidders and/or to award the Contract in whole or in part. Award shall be to the Responsible Bidder that submits the Lowest Responsive Bid Proposal. If for any reason, through no fault of the City, the Contract is not executed within thirty (30) days' of formal award, the City may withdraw the award and award the Contract to the Responsible Bidder that submitted the next Lowest Responsive Bid Proposal, or to solicit new Bid Proposals.

B. In the event the City receives only one (1) Bid Proposal in response to this Solicitation, the City reserves the right, in its sole discretion, to proceed as a negotiated procurement with the Bidder that submitted the Bid Proposal.

5.9. ERRORS IN BID PROPOSALS

Obvious error(s) in calculations in any Bid Proposal may not be corrected without the prior written consent of the City and may be cause for the Bid Proposal to be deemed non-responsive. If an error is made in an extended price, the unit price will govern.

5.10. INTEREST IN MORE THAN ONE BID PROPOSAL AND COLLUSION

Multiple Bid Proposals submitted in response to this Solicitation by any Bidder under the same or different names shall be rejected as non-responsive. Reasonable grounds for believing that any Bidder has interest in more than one (1) Bid Proposal for this Solicitation, both as the Bidder and as a subcontractor for another Bidder, shall result in the rejection of all Bid Proposals in which the Bidder has interest and disqualify the Bidder from responding to any reissuance of this Solicitation. However, a Person acting only as a subcontractor may be included as a subcontractor for multiple Bidders. The City may reject all Bid Proposals if reasonable cause exists for believing that collusion exists among Bidders.

5.11. LATE BID PROPOSALS

It is the responsibility of the Bidder to ensure the delivery of its Bid Proposal by the Submission Deadline and to the person and at the location specified in Section 4.2 of this Solicitation. Any and all Bid Proposals delivered or submitted late or to any location other than the designated location shall be rejected as non-responsive. The submission of any Bid Proposal by way of facsimile or e-mail is strictly prohibited; any and all Bid Proposals submitted as such shall be rejected as non-responsive. The City assumes no responsibility for any delays and/or errors in the delivery of a Bid Proposal; postmarking by the Submission Deadline shall not substitute for actual receipt. Any and all Bid Proposals submitted not in compliance with any of the provisions of this paragraph shall be rejected as non-responsive.

5.12. MODIFICATIONS TO BID PROPOSALS

The Bidder may only modify its Bid Proposal prior to the Submission Deadline and in accordance with and subject to the following:

A. The City shall consider a modified Bid Proposal as an entirely new Bid Proposal and shall replace the original Bid Proposal, which shall be deemed to be withdrawn and null and void.

B. The modified Bid Proposal shall be subject to all the requirements, specifications and terms and conditions set forth herein.

C. Notwithstanding the provisions with respect to the submission of a Bid Proposal herein, the modified Bid Proposal shall clearly be labeled "Modified Bid Proposal".

5.13. OPTIONAL GOODS AND/OR SERVICES

The City reserves the right to request and evaluate optional goods and/or services which may be in the best interests of the City, and to negotiate the price of such goods and/or services with the successful Bidder or with another Bidder, whichever is determined to be the most advantageous to the City. While pricing for optional goods and/or services may be requested in this Solicitation, the City is under no obligation to consider such optional goods and/or services when selecting the successful Bidder unless otherwise stated.

5.14. SOLICITATION DOCUMENTS

The Bidder is expected to carefully and thoroughly examine all of the Solicitation Documents for accuracy and completeness, and to become familiar with the same. If doubt exists as to the meaning and/or intent in or of any of the Solicitation Documents, the Bidder shall make an inquiry as to such meaning and/or intent. The failure of the Bidder to examine and become familiar with any and all of the Solicitation Documents shall in no way relieve the Bidder of its obligations under the Contract, if awarded to the Bidder. The submission of a Bid Proposal shall be taken as prima facie evidence of compliance with this provision and that the Bidder fully understands everything in the Solicitation Documents.

5.15. SOLICITATION PROTEST

A. Any protest of this Solicitation shall be in writing to the City Attorney. The provisions of COMAR Title 21.01.03.01A(7), State Procurement Regulations, do not apply to municipalities and are not applicable to this Solicitation. Protests of alleged improprieties in this Solicitation shall be filed prior to the Submission Deadline.

B. Any written protest shall, at a minimum, include: (i) the name, address, telephone number, and if available, email address of the Person making the protest; (ii) the Solicitation number and a detailed statement of the legal and factual grounds for the protest, including a description of resulting harm to the Person making the protest; and (iii) any and all copies of supporting exhibits, evidence and/or documents to substantiate the claim.

5.16. <u>USE OF BROKER</u>

The Bidder warrants that no person or selling agency has been employed or retained to solicit or secure the Contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, except bona fide employees, or bona fide established commercial or selling agencies maintained by the Bidder for the purpose of securing business. For violation of this provision, the City shall have the right, in its sole discretion: (i) to terminate or suspend the Contract without liability to the City, its officials or employees; or (ii) to deduct from the Contract price or consideration, the full amount of such commission, percentage, brokerage, or contingent fee.

5.17. <u>ACCOUNTING SYSTEM AND AUDIT</u>

A. The Contractor certifies its accounting system conforms to Generally Accepted Accounting Principles (GAAP) and is sufficient to comply with its budgetary and financial obligations under the Contract. In addition, the Contractor acknowledges and agrees to the following:

   I. The Contractor: (i) shall maintain any and all necessary source documentation, accounting records and supporting documentation in such a manner that will provide for a separation between direct and indirect costs; and (ii) shall enforce sufficient internal controls as dictated by GAAP to properly account for expenses incurred under the Contract.

   II. The Contractor: (i) shall allow the City to examine and/or obtain copies of the Contractor's records to determine and verify compliance with the terms and conditions of the Contract; (ii) shall grant the City access to such records at all reasonable times during the Contract term and for a period of five (5) years thereafter; and (iii) shall make such records available for examination and/or to obtain copies by any and all Federal, State and/or County authorities if the Contract is supported to any extent with any funds of the same.

B. The Contractor shall include a similar provision in any and all subcontracts.

5.18. <u>ASSIGNMENT OF THE CONTRACT</u>

The City's rights under the Contract are personal to the Contractor. It is mutually understood and agreed that the Contractor shall not assign, convey, sublet, transfer or otherwise dispose of its Contract or its right, title or interest therein, or its power to execute the Contract, to any other person without the express written consent of the City; however, in no case shall such consent relieve the Contractor from its obligations under the Contract, or change the terms and conditions of the Contract.

5.19. CHANGES IN GOODS AND/OR SERVICES

The City, without invalidating the Contract, may order changes in the goods and/or Services within the general scope of the Contract, consisting of additions, deletions and/or other revisions, and the Contract sum and term shall be adjusted accordingly. Any cost or credit to the City from a change in Services shall be determined by mutual written agreement between the City and the Contractor. The Contractor shall provide all of the goods and services that may be required to complete the Contract at the price agreed upon. Any alterations of variables to the terms of the Contract shall not be valid or binding upon the City unless made in writing and signed by the City and the Contractor.

5.20. CONTRACT DISPUTES

Any and all disputes arising under the Contract, except under the provisions for termination, which are not disposed of by agreement between the City and the Contractor, shall be decided under procedures A-D listed below. Pending final resolution of a dispute, the Contractor shall proceed diligently with Contract performance. A claim must be in writing for a sum certain and any money requested must be fully supported by all cost and pricing information.

A. All disputes, claims, questions of fact or interpretations of the documents of the Contract not disposed of by agreement or express provision of the Contract arising between the City and the Contractor after performance of the Contract has commenced but before final payment and termination of the Contract, are decided by the City Manager.

B. The City Manager must give the Contractor not less than three (3) working days to submit documentation and written reasons supporting the Contractor's position in the dispute. The City Manager may consider any other information or written submissions from City employees or agents and may conduct an informal, non-record hearing for receipt of testimony, evidence and/or argument. The City Attorney may participate in the hearings to protect the City's interest.

C. The City Manager must render a decision, in writing, stating reasons for such decision and provide copies to the Contractor and the City Attorney. If the decision is mailed to the Contractor, it must be mailed "certified" and dated the date of mailing; otherwise, it must be dated the date of delivery to the Contractor.

D. The City Manager's decision may be submitted to Binding Arbitration by either Party under the auspices of an arbitrator appointed by the American Arbitration Association.

5.21. DISSEMINATION OF DATA

The Contractor shall not release any information related to the Services under the Contract or publish any reports or documents related to the same without the prior written approval of the City. The Contractor shall include a similar provision in all subcontracts.

5.22. ETHICS LAWS AND REQUIREMENTS

The Contractor shall comply with the financial disclosure and conflict of interest and lobbying provisions of the City's ethics laws, which may be found on the City's website at: http://www.gaithersburgmd.gov/government/city-code.

5.23. EMPLOYMENT AS INDEPENDENT CONTRACTOR

The City and the Contractor recognize and agree: (i) that the Contractor shall act as an independent Contractor to the City; (ii) that the Contract does not create any actual or apparent agency, partnership, franchise, or relationship of employer and employee between the parties; (iii) that neither party shall be entitled to participate in any of the other party's benefits, including without limitation, any health or retirement plans; (iv) that the Contractor shall not be entitled to any remuneration, benefits, or expenses other than as specifically provided for in the Contract; and (v) that the City shall not be liable for any insurance, taxes, or withholding for or on behalf of the Contractor; all such insurance, taxes or withholding, and costs for same, shall be the sole responsibility of the Contractor.

5.24. FORCE MAJEURE

The City and the Contractor acknowledge and agree that either party hereto will be relieved of its obligations hereunder in the event and to the extent that the performance of its obligations under the Contract is delayed or prevented by any cause beyond its control, including, without limitation, acts of God, public enemies, war, insurrection, acts or orders of governmental authorities, fire, flood, explosion, or riots ("Force Majeure"). Failure to receive necessary materials and supplies will not excuse performance hereunder unless such failure is itself due to an event of Force Majeure. A party obtaining relief under this provision shall make every reasonable effort to minimize the effects thereof and will promptly resume performance as soon as possible.

5.25. GOVERNING LAW

The Contract shall be construed in accordance with the laws and regulations of the Federal Government, State of Maryland, and the City. For purposes of litigation involving the Contract, exclusive venue and jurisdiction shall be in the Circuit Court of Maryland for Montgomery County, District Court of Maryland for Montgomery County or the United States District Court of Maryland.

5.26. IMMIGRATION REFORM AND CONTROL ACT

The Contractor shall warrant that it does not and shall not hire, recruit or refer for a fee for employment under the Contract, an alien, knowing the alien is an unauthorized alien, and hire any individual without complying with the requirements of the Immigration Reform and Control Act of 1986 ("Act"), including but not limited to any verification and record keeping requirements. The Contractor shall further assure the City that, in accordance with the Act, it does not and will not discriminate against an individual with respect to hiring, or recruitment or referral for a fee, of the individual for employment or the discharging of the individual from employment because of such individual's national origin or in the case of a citizen or intending citizen, because of such individual's citizenship status.

5.27. INCONSISTENT PROVISIONS

A. Notwithstanding any provisions to the contrary in the terms and conditions of any contract supplied by the Contractor, the conditions of this Solicitation and the Contract supersede those terms and conditions in the event of inconsistency.

B. In the event of any inconsistency between any of the provisions of this Solicitation and any of the provisions of the Contract, the provisions of the Contract shall take precedence over and supersede those provisions in the event of any inconsistency.

5.28. INDEMNIFICATION

The Contractor shall indemnify and hold harmless the City, its officials, employees and agents from the following:

A. Any and all direct or indirect damages, costs, claims, actions, suits, judgments or liens resulting from the negligent act or commission or omission of the Contractor, its employees, agents or subcontractors; and

B. Any and all direct or indirect costs, claims, actions, suits, judgments or liens for damages resulting from the Contract arising from the negligence or omission of the Contractor, its employees, agents or subcontractors. The Contractor shall, upon completion of the Services, provide the City with a Release of Liens from any subcontractor, supplier, material, or other supplier of goods and services to the project.

5.29. LAWS AND REGULATIONS

The Contractor shall comply with any and all applicable federal, state and local laws, codes and regulations with respect to the Services under the Contract.

5.30. NO LIENS

The Contractor shall have no title or interest in any of the materials delivered to the City under the Contract. In no event shall the Contractor encumber any such materials delivered to the City with any lien of any kind or offer such materials as collateral in any transaction whatsoever. The Contractor shall, upon completion of the Services, provide the City with a Release of Liens from any and all subcontractors and/or other suppliers.

5.31. NO WAIVER

Except as otherwise specifically provided in the Contract, a waiver by either party to the Contract of any breach of any provision of the Contract, or either party's decision not to invoke or enforce any right under the Contract, shall not be deemed a waiver of any right or subsequent breach, and all provisions of the Contract shall remain in force.

5.32. NON-DISCRIMINATION REQUIREMENTS

A. The Contractor acknowledges and agrees that during the term of the Contract it shall:

I. Not discriminate against any employee or applicant for employment because of gender preference, race, color, creed, religion, ancestry, sex, sexual orientation, national origin, affection preference, disability, age, marital status or status with regard to public assistance or as a disabled veteran or veteran of the Vietnam era.

II. Take affirmative action to ensure that applicants and employees are treated without regard to their race, color, creed, religion, ancestry, sex, sexual orientation, national origin, affection preference, gender preference, disability, age, marital status or status with regard to public assistance or as a disabled veteran or veteran of the Vietnam era. Such action shall include but not be limited to the following: employment, upgrade, demotion or transfer; recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

III. In all solicitations for employees, state that all qualified applicants will receive consideration for employment without regard to race, color, creed, religion, ancestry, sex, sexual orientation, national origin, affection preference, gender preference, disability, age, marital status or status with regard to public assistance or as a disabled veteran or veteran of the Vietnam era. The Contractor agrees to use clauses similar to those above in all contracts and subcontracts. In the event the Contractor fails to comply with the nondiscrimination clauses of the Contract, or fails to include such provisions in all contracts and subcontracts, as hereinabove provided, the Contract may at the sole discretion of the City be declared void AB INITIO, canceled, terminated or suspended in whole or in part with waiver of any recourse by the Contractor against the City or its officials or employees, and the Contractor may be declared ineligible for further contracts with the City.

B. Any employee, applicant for employment, or prospective employee with information concerning any breach of these requirements may communicate such information to City Manager who shall commence a prompt investigation of the alleged violation. Pursuant to such investigation, the Contractor shall permit access to their books, records and accounts. In the event the City Manager concludes, on the basis of such investigation, that the Contractor has failed to comply with these nondiscrimination clauses, the City Manager may invoke the remedies hereinabove set out.

5.33. <u>NONEXCLUSIVE</u>

Nothing in the Contract shall be deemed to act as a bar to the City's solicitation or purchasing of equipment, goods or services from any other company or entity.

5.34. <u>OWNERSHIP OF MATERIALS</u>

Unless otherwise agreed in writing by the City and the Contractor, any work, specifications, information, data, drawings, software and other items produced under the Contract, other than any Contractor Tool, is to be deemed a work-for-hire to the extent permitted by law, and, to the extent not so permitted, shall be assigned to, and shall become, the exclusive property of the City.

5.35. <u>PATENTS</u>

A. Whenever any article, material, appliance, process composition, means or things called for by the specifications ("Materials") under this Solicitation is covered by Letters of Patent, the Contractor shall secure, prior to using or employing such Materials, the assent in writing of the owner or licensee of such Letters of Patent and file the same with the City.

B. The Contractor shall defend, at its own expense, and pay the cost and damages awarded in any action brought against the City based on an allegation that the Materials provided by the Contractor infringe on any patent, copyright, license or trade secret. In the event that an injunction shall be obtained against the City's use of the Materials by reason of infringement of any patent, copyright, license or trade secret, the Contractor shall, at its own expense, procure for the City the right to continue using the Materials or replace or modify the same so that it becomes non-infringing.

5.36. PAYMENT TERMS, TAXES AND INVOICES

The City shall only pay original proper invoices issued in accordance with the following:

A. Payment Terms

The City's standard terms of payment are net thirty (30) days; however, this does not preclude the Contractor from providing a prompt payment discount for the payment of invoices in less than thirty (30) days. Payments considered past-due may be subject to incurred interest not to exceed one percent (1%) per month.

B. Taxes

The City is exempt from sales and use taxes. The Contractor shall exclude such taxes from all forms of requests for payments issued to the City; the City shall not be liable for or pay or reimburse the Contractor for any such taxes. A copy of the City's Sales and Use Tax Exemption Certificate is provided below.

State of Maryland Comptroller of the Treasury
Sales and Use Tax Exemption Certificate

Account Number
30042445

Expiration Date
Governmental
No Expiration Date

Name
CITY OF GAITHERSBURG
31 S SUMMIT AVENUE
GAITHERSBURG, MD 20877

C. Invoices

Original invoices shall include at a minimum, the Contractor's name, address, telephone and fax numbers, and if applicable, email address and corresponding purchase order number. Invoices shall be submitted to: City of Gaithersburg, Accounts Payable Division, 31 South Summit Avenue, Gaithersburg, Maryland 20877.

5.37. RECORDS

The Contractor shall retain any and all records and documents relating to the Services under the Contract for a minimum of five (5) years following payment of the Contractor's final undisputed proper invoice for the complete rendered Services. The Contractor shall make available to the City, State of Maryland and any and all appropriate Federal agencies, all records and documents with respect to any and all matters under the Contract at any time during normal business hours, as often as the City deems necessary, to audit, examine, and make copies, excerpts and/or transcripts of any and all relevant data. The Contractor shall include similar provisions in all subcontracts.

5.38. SUBCONTRACTORS

The Contractor acknowledges and agrees: that if it shall be necessary to hire or subcontract with competent personnel to fulfill its obligations under the Contract, it shall do so at its own expense; and to ensure that any and all work assigned to any subcontractor shall be performed in compliance with all of the terms and conditions of the Contract. Nothing contained in the Contract shall create any contractual relation between any subcontractor and the City.

5.39. SURVIVAL

The representations, warranties and indemnities contained herein shall survive the termination of the Contract.

5.40. TERMINATION

A. Termination for Cause

I. If through any cause, the Contractor fails to fulfill in a timely and proper manner its obligations under the Contract, or if the Contractor violates any of the provisions of the Contract, the City may upon written notice to the Contractor, terminate the right of the Contractor to proceed under the Contract or with such part or parts of the Contract to which there has been default, and may hold the Contractor liable for any damages caused the City by reason of such default and termination, if the default is not corrected within 15 days' notice to cure. In addition, the Contract may be terminated for the bankruptcy, dissolution, assignment for the benefit of creditors, or other similar action of the Contractor.

II. In the event of such termination, any completed Services performed by the Contractor under the Contract shall, at the option of the City, become its property and the Contractor shall be entitled to receive equitable compensation for any work completed to the satisfaction of the City. The Contractor, however, shall not thereby be relieved of liability to the City for damages sustained by the City by reason of any breach of the Contract by the Contractor, and the City may withhold any payments to the Contractor for the purpose of setoff until such time as the amount of damages due the City from the Contractor is determined. The Contractor shall not be responsible for damages under this article solely for reasons of delay if the delay is due to causes beyond its control and without its fault or negligence, but this shall not prevent the City from terminating the Contract for such delay.

B. Termination for Convenience

The City may, upon written notice and without cause, terminate the Contract in whole or in part at any time for its convenience. In such instance, payment shall be made to the Contractor for the reasonable costs of the work performed through the date of termination. Termination costs do not include lost profits, consequential damages, delay damages, unabsorbed or under-absorbed overhead of the Contractor or its subcontractors or suppliers. Failure of the Contractor to include a termination for convenience clause into its subcontracts and material purchase orders shall not result in any liability to the City for lost profits in conjunction with a termination for convenience. The Contractor expressly waives any damages, delay damages, or indirect costs which may arise from the City's election to terminate the Contract in whole or in part for its convenience.

C. Termination for Non-Appropriation of Funds

The City shall not be obligated to the Contract for any future fiscal year until funds are appropriated for each such future fiscal year. In the event funding appropriation is not approved, the City may, upon written notice, terminate the Contract in whole or in part and without penalty or expense to the City. The effect of such action shall terminate the Contract on the last day of the fiscal year for which appropriations were made.

~ END OF SECTION 5 ~

SECTION 6: Special Terms and Conditions

6.1. BONDS

A. A bid bond, a payment bond and a performance bond (collectively "Bonds"), shall be furnished to the City in accordance with and subject to the following:

I. The Bidder shall submit with its Bid Proposal an executed bid bond in an amount equal to five percent (5%) of the Bidder's total Bid Proposal price. A certified copy of the Power of Attorney of the attorney-in-fact executing said bond shall be attached and be certified by manual signature.

II. The Contractor shall, within ten (10) business days following receipt of a notice of intent to award issued by the City, furnish to the City an executed payment bond in an amount equal to one hundred percent (100%) of the total Contract sum. A certified copy of the Power of Attorney of the attorney-in-fact executing said bond shall be attached, be certified by manual signature, and bear the same date at the performance bond.

III. The Contractor shall, within ten (10) business days following receipt of a notice of intent to award issued by the City, furnish to the City an executed performance bond in an amount equal to one hundred percent (100%) of the total Contract sum. A certified copy of the Power of Attorney of the attorney-in-fact executing said bond shall be attached, be certified by manual signature, and bear the same date at the payment bond.

IV. The Bonds shall be executed in accordance with and subject to the following:

(a) The bonding entity shall be registered and in good standing in the State of Maryland in accordance with the State of Maryland Code of Regulations Title 21, State Procurement Regulations. This provision shall apply to any and all co-sureties utilized by the bonding entity in execution of the Bonds.

(b) The bonding entity shall maintain a rating of A-minus (A-) or better with A.M. Best. This provision shall apply to any and all co-sureties utilized by the bonding entity in execution of the Bonds.

(c) The bonding entity shall consent to exclusive venue and jurisdiction in the Circuit Court for Montgomery County, Maryland. This provision shall apply to any and all co-sureties utilized by the bonding entity in execution of the Bonds.

(d) The date of the Bonds shall not exceed the date of the Contract or subsequent thereto.

(e) The Bonds shall contain provisions which are similar to the following:

➥ ***GOVERNING LAW.*** *This Bond shall be governed by, and construed in accordance with the laws of the State of Maryland without regard to its conflict of laws provisions.*

- ***NO THIRD PARTY BENEFICIARIES.*** *The Surety provides this Bond for the sole and exclusive benefit of the City and, if applicable, any dual oblige designated by attached rider, together with their heirs, administrators, executors, successors and assigns. No other party, person or entity shall have any rights against this Surety.*

- ***VENUE.*** *In the event any legal action shall be filed upon this Bond, venue shall lie exclusively in the Circuit Court for Montgomery County, Maryland.*

- ***WAIVER OF NOTICE.*** *The Surety waives notice of any modifications to the Contract, including changes in the Contract Time, the Contract Sum, the amount of liquidated damages, or the Work and/or Services performed.*

B. All bid bonds shall be retained by the City until the Contract is executed or until such time that a Bidder requests its Bid Proposal to be withdrawn in accordance with Section 5.6 (Binding Bid Proposal) of this Solicitation. The City shall immediately return the bid bond of any Bidder whose Bid Proposal is deemed by the City to be non-responsive, or shall immediately return all bid bonds in the event the Solicitation process is canceled by the City.

6.2. INSURANCE

A. The Contractor shall at its expense obtain and maintain in force during the term of the Contract the following policies of insurance, each with a minimum limit in an amount no less than one million dollars ($1,000,000):

   I. Comprehensive Commercial General Liability
   II. Professional Liability (Errors and Omissions)
   III. Workers' Compensation

B. The City shall be named as an additional insured under the comprehensive commercial general liability policy, and shall receive at least thirty (30) days written notice of any cancellation or adverse material change in that policy, such that any cancellation or adverse material change shall not be effective with respect to the City for thirty (30) days after such written notice is given.

C. Prior to the execution of the Contract, the Contractor shall provide the City with a certificate of insurance, which shall: (i) evidence the above policies; (ii) name the City as additional insured with respect to the comprehensive commercial general liability insurance policy only; and (iii) contain a provision that requires the Contractor's insurers to provide the City with a written notice of any cancellation or adverse material change in the insurance and that such cancellation or adverse material change shall not be effective with respect to the City for thirty (30) days after such written notice is given.

D. The Contractor acknowledges and agrees that its failure to provide the City with a certificate of insurance and/or the failure by the City to demand the delivery of said certificate shall not operate or be deemed to operate as a waiver of the insurance and associated endorsements required under this provision, and the Contractor shall hold the City harmless from any liability arising as a result of any such failure(s).

6.3. PAYMENTS

A. Payments under the Contract shall be based on the Contractor's completion of milestones, which shall be later established and agreed upon in writing between the City and the Contractor. Payments shall be made following the City's acceptance of such completed milestones and the receipt of undisputed proper invoices for the same, which are issued in accordance with the provisions for retainage below and with Section 5.36 (Payment Terms, Taxes and Invoices) herein.

B. On each invoice submitted to the City for payment, the Contractor shall deduct ten percent (10%) of the total respective invoice amount as retainage. In the event the Contractor fails to deduct such retainage from any invoice, the City shall deduct the retainage. The Contractor shall be paid the total amount of deducted retainage following the issuance of a project acceptance letter by the City and the receipt of an undisputed proper invoice for the same, which shall include the total amount of such retainage.

6.4. PROJECT CONDITIONS

A. Change Order Overhead and Profit

I. For any and all change orders in work under the Contract ("Change Order"), the percentages for overhead, profit, and commission shall be negotiable according to the nature, extent, and complexity of the work involved, but in no case shall such percentages exceed the ceilings shown below.

	Overhead	Profit	Commission
To the Contractor on work performed by its own forces.	10%	5%	
To the Contractor on work performed by other than its own forces.			5%
To a subcontractor on work performed by its own forces.	10%	5%	

II. For work performed under a Change Order by its own forces:

(a) The Contractor and its subcontractors shall be allowed the actual amount of materials and the total amount of labor for same.

(b) The overhead percentages shall be considered to include indirect costs including, but not limited to, field and office supervisors and assistants, incidental job burdens, small tools, and general overhead allocations, for same.

III. Neither the Contractor nor its subcontractors shall be allowed overhead or commission on the overhead, profit, and/or commission received by any of its subcontractors.

IV. Equitable adjustments for deleted work shall include credits, limited to the same percentages for overhead, profit, and commission in paragraph I hereinabove.

V. For a Change Order that includes both an increase and decrease in the amount of the Contract, the percentages for overhead, profit, and commission shall only be allowed on the amount of the net change.

VI. Neither the Contractor nor its subcontractors shall be allowed any percentages for overhead, profit, and/or commission on work under a Change Order which is necessary due to the negligence and/or poor workmanship of the Contractor and/or its subcontractors.

VII. Contractor's proposed Change Orders shall include detailed line item costs including labor and materials, unit cost shall comply with bid worksheet line item costs.

B. <u>Construction Coordination</u>

I. The Contractor shall submit a Project Schedule to the Project Manager for approval prior to starting any of the work, and shall not begin any such work until the Project Schedule is approved in writing by the Project Manager. Each day the Contractor works, it shall prepare and submit a daily report to the Project Manager, which shall include the following:

- Name of project;
- Project number;
- Date of the report;
- Weather conditions;
- Manpower status on each type of work being performed at the project site;
- Overtime worked and/or planned;
- Work progress;
- Any and all environmental problems and/or corrections; and
- Other information such as: special events or occurrences, accidents, recommendations, suggestions, visitors, any major equipment and/or received materials, tests, inspections, equipment start-up and check-out, and occupancy.

II. In addition, the Contractor shall take any and all necessary action required to alert the Project Manager of any and all items which could result in a claim.

C. <u>Construction Phase Planning</u>

I. In order to minimize construction delays and weather related damages, the Contractor shall prepare and submit a written Construction Phase Plan to the Project Manager prior to the preconstruction meeting. The Construction Phase Plan shall address, at a minimum, the following:

- Construction safety
- Environment compliance
- Soil erosion
- Site security
- Potential damage due to weather
- Permits and inspections

II. The Contractor shall begin mobilizing for construction upon approval of the Construction Phase Plan by the Project Manager.

D. <u>Key Personnel</u>

The Contractor shall utilize the personnel and subcontractors named in its Bid Proposal; the replacement or substitution such personnel and/or subcontractors shall be permitted only with the prior written approval of the Project Manager.

E. <u>Notice to Proceed and Substantial Completion</u>

Within 30 calendar days following the effective date of the Contract, the Project Manager will issue the Contractor a written Notice to Proceed ("NTP"), after which the Contractor shall undertake the work with adequate forces and achieve Substantial Completion by the Date of Substantial Completion, which shall be later established and agreed upon in writing between the City and the Contractor.

F. <u>Liquidated Damages</u>

The Contractor acknowledges that the City may incur actual and considerable monetary damages if Substantial Completion is not achieved by the Date of Substantial Completion, the actual amounts of which may be uncertain and not readily ascertainable. As such, the City reserves the right in its sole discretion to require the Contractor to pay liquidated damages in an amount not to exceed two hundred dollars ($200) per day for each day the Contractor fails to achieve Substantial Completion beyond the Date of Substantial Completion.

G. <u>Field Verification and Identification</u>

The Contractor shall verify all field conditions and dimensions prior to mobilizing construction activities. The Contractor shall report any and all discrepancies and/or conflicts to the Project Manager within 15 days following the receipt of NTP.

H. <u>Inspections, Licenses and Permits</u>

The Contractor shall obtain any and all permits and licenses and coordinate any and all inspections necessary to properly perform the work under the Contract. The City acknowledges and agrees to waive the fee for any permits that are both required by and issued by the City.

I. <u>Project Closeout and Final Acceptance</u>

I. The Contractor shall immediately notify the Project Manager in writing when it considers all of the work under the Contract to be complete. Upon notification, the City shall inspect, within a reasonable time, the work to determine if the work is complete in accordance with the Contract documents. If the City identifies any work that needs to be corrected, it will issue the Contractor a written punch list of items to be corrected, after which the Contractor shall proceed promptly to correct such items. Failure by the City to include an item(s) on the punch list shall not alter the responsibility of the Contractor to complete all the work in accordance with the Contract. The City shall notify the Contractor in writing once it considers all the items on the punch list to be fully corrected and the work to be fully completed in accordance with the Contract documents.

II. The City shall issue the Contractor a project acceptance letter ("Acceptance Letter") and then process the final payment (upon receipt of a proper and undisputed invoice) once it considers the project and Services are fully complete. The City shall consider the project and the Services to be fully complete only upon the submittal to and acceptance by the City of all completed documents ("Project Closing Documents"), which include, but are not limited to: as-built documentation, drawings, record documents, design documents, complete O&M manuals, warranties, inspection certificates, and any other required documents.

J. <u>Project Supervision</u>

I. The Contractor shall have a full-time supervisor present at the Site at all times while work is performed, who shall have a minimum of five (5) years of experience providing services similar to the Services hereunder. Upon request by the Project Manager, the Contractor shall furnish the Project Manager with a copy of the supervisor's resume for his or her approval. The resume shall, at a minimum, include the education and experience of the supervisor. The Contractor shall only assign a supervisor to the project once it receives written approval by the Project Manager.

II. The supervisor shall be responsible: (i) for coordinating, directing and supervising all work and ensuring all work progresses without delay; (ii) for verifying measurements; (iii) for receiving, inspecting, accepting and protecting all equipment and/or materials delivered to or stored at the Site; and (iv) for inspecting and protecting all completed work. Any and all instructions and/or orders given to the supervisor by the City shall have the same force and effect as if given directly to the Contractor by the City.

K. <u>Sample Materials</u>

The Contractor shall, when requested by the City, provide the City with samples of any and all materials to be used under the Contract. The Services under the Contract shall be provided in accordance with approved samples.

L. <u>Schedule of Services</u>

Work shall be performed Monday through Friday between the hours of 7:00AM and 5:00PM or Dusk, whichever comes first. In addition, work may be performed on weekends between the hours of 9:00AM and 5:00PM with the prior written approval of the Project Manager.

M. <u>Shop and Record Drawings</u>

The Contractor shall furnish the City with all shop drawings (as needed) and record such drawings as part of the Project Closing Documents.

N. <u>Site Safety and Use of Premises</u>

At all times while providing the Services under the Contract, the Contractor shall:

I. Enforce suitable rules and provide any and all guards, signs, fences, dust barriers and/or protective devices required for the safe completion the Services.

II. Confine operations at the Site to the areas permitted under the Contract ("Work Zone"). Any and all areas outside of the Work Zone shall not to be disturbed.

III. Conform to any and all Site rules and regulations affecting the work while engaged in construction.

IV. Keep areas outside the Work Zone clear and available to the public while the Facility is open to the same. Do not use these areas for parking or for the storage of materials; such parking and storage areas shall be limited to those areas within the Work Zone. If any additional storage is necessary, obtain and pay for such storage off-site.

O. <u>Toilet Facilities</u>

The Contractor shall be responsible providing any and all toilet facilities for use by its workforce while providing the Services.

P. <u>Warranties</u>

I. The Contractor acknowledges and agrees to warrant all workmanship and material under the Contract against any and all defects, including defects in material due to workmanship, for a period of one (1) year from the date of the Acceptance Letter.

II. The Contractor agrees to follow and honor all special warranties, consisting of all manufacturer warranties for repair or replacement of products that fail in materials or workmanship, that corrode, or that fade, stain, perforate, erode or chalk due to effects of weather or solar radiation within the specified warranty period.

III. The Contractor agrees to provide a warranty for luminaires, metal corrosion and color retention for a period of five (5) years from the date of the Acceptance Letter.

IV. The Contractor shall provide a fixture and structural warranty for a minimum of five (5) years from the date of the Acceptance Letter, which includes, but is not limited to: building framing, plumbing systems and components, electrical systems and components, and mechanical systems and components.

V. The Contractor shall provide a warranty for the installation of the roof for a period of two (2) years, and shall provide a manufacturer's warranty on the fiberglass asphalt architectural shingles for a period of thirty (30) years from the date of the Acceptance Letter.

VI. The Contractor shall provide a warranty to replace lamps and fuses that fail within twenty-four (24) months of the date of the Acceptance Letter, and shall provide a warranty to furnish replacement lamps and fuses that fail within the second twenty-four (24) months from date of the Acceptance Letter.

VII. Contractor shall provide a warranty within the manufacturer's standard warranty, but not less than five (5) years, for fixtures and wiring, by which Contractor shall repair or replace lighting fixtures and standards that fail in finish, materials, and workmanship.

VIII. In the event that any claims are filed or work is required under any of the above warranties, the Contractor shall make any and all necessary repairs and/or replacements within ten (10) business days of a receipt of notice to cure or such other time period to which the City and the Contractor agree in writing.

IX. The Contractor shall submit written copies of all the above warranties as part of the Project Closing Documents.

~ END OF SECTION 6 ~

SECTION 7: Scope of Work and Specifications

7.1. GENERAL

The City of Gaithersburg, Department of Public Works desires to construct one (1), Two Thousand Six Hundred (2,600) ton capacity high arch gambrel salt building. The building will be constructed at the Department of Public Works Facility, which is located at 800 Rabbitt Road, Gaithersburg, Maryland 20878. The footprint of the building shall be approximately 50' Length by 88' Length. The building shall have concrete vertical side walls, which will be twelve (12) feet above finished floor. The overall height of the building must not exceed forty (40) feet above finished grade. Nominal dimensions of the lean-to shall be 16' deep by 68' long, with column spacing 12'-0" on center, and minimum clearances of 14' from finished floor to the underside of the trusses, and 12.5' to the header at the outer edge. Please refer to Attachments B through E hereto for additional information and detailed specifications.

7.2. RELATED DOCUMENTS

The following documents are incorporated herein and attached hereto as follows:

- Attachment B: Planning Commission Amendment to Final Plan Approval.
- Attachment C: GeoTechnical Report, prepared by Herbst/Benson and Associates, dated April 30, 2015 (Rev# 5/21/15)
- Attachment D: Specifications
- Attachment E: Construction Drawings

~ END OF SECTION 7 ~

SECTION 8: Attachments

REQUEST FOR BIDS

NO. 2016-024

HI-ARCH GAMBREL SALT STORAGE BUILDING

ATTACHMENT A

Procurement Forms

City of Gaithersburg

Addendum and Amendment Acknowledgment

Solicitation No. _____

Please complete this form in its entirety and include it with your Bid Proposal.

Name of Entity: _____

Street Address: _____

_____

City, State & Zip Code: _____, _____ _____

ADDENDUM/AMENDMENT ACKNOWLEDGMENT

1. ☐ Addendum / ☐ Amendment No: _____ Date of Issuance: _____

2. ☐ Addendum / ☐ Amendment No: _____ Date of Issuance: _____

3. ☐ Addendum / ☐ Amendment No: _____ Date of Issuance: _____

4. ☐ Addendum / ☐ Amendment No: _____ Date of Issuance: _____

5. ☐ Addendum / ☐ Amendment No: _____ Date of Issuance: _____

I hereby acknowledge receipt of the addendum(s) and/or amendment(s) listed herein and attests that all requirements stated therein have been incorporated into my Bid Proposal.

_____ _____ _____

Signature Title Date

_____

Printed Name

City of Gaithersburg

Affidavit of Qualification to Bid

Solicitation No. _____

Please complete this form in its entirety and include it with your Bid Proposal. For the purpose of completing this form, "entity" means an individual, sole proprietor, partnership, corporation, limited liability corporation (LLC), company, or association.

*Does not apply to individuals or sole proprietors – indicate with "N/A"

I HEREBY AFFIRM THAT:

1. I am the _____ (*Title*) and the duly authorized representative of the entity _____ (*Name of Entity*) and that I possess the legal authority to make this affidavit on behalf of myself and the entity for which I am acting.

*2. The entity _____ is either a Maryland corporation or is a foreign corporation properly registered with the Maryland State Department of Assessments and Taxation, in compliance with the State of Maryland Code of Regulations, Title 21, State Procurement Regulations.

3. Except as described in Paragraph five (5) below, neither I nor the above entity, nor to the best of my knowledge, any of its officers, directors, or partners, or any of its employees directly involved in obtaining contracts with the State of Maryland or any municipality, county, bi-county, or multi-county agency, or subdivision of the State of Maryland have been convicted of, or have pleaded nolo contendere to a charge of, or have, during the course of an official investigation or other proceeding, admitted in writing or under oath, acts of omissions which constitute bribery, attempted bribery, or conspiracy to bribe, whether or not in furtherance of obtaining a contract with a public body, under the provisions Md. Code Ann., State Finance and Procurement Article, §16-202 (1995 Repl. Vol.) and Article 27 of the Annotated Code of Maryland or under the laws of any local, state or the federal government (conduct prior to July 2, 1977 is not required to be reported).

4. List any conviction, plea, or admission described in paragraph three (3) above, with the date, court, official, or administrative body; the individuals involved and their position with the entity; and the sentence or disposition, if any. Otherwise, state "none" as appropriate.

_____

_____

5. Neither I nor the above entity, nor to the best of my knowledge an officer, partner, controlling stockholder or principal of the Bidder, or any other person substantially involved in the Bidder's contracting activities has: (1) been convicted under the laws of the State of Maryland, another state or the United States of: (i) a criminal offense incident to obtaining, attempting to obtain, or performing a public or private contract, except as provided in Section 16-202 of the State Finance and Procurement Article of the Annotated Code of Maryland; or (ii) fraud, embezzlement, theft, forgery, falsification or destruction of records, or receiving stolen property; (2) been convicted of a criminal violation of an antitrust statute of the State of Maryland, another state or the United States; (3) been convicted of a violation of the Racketeer Influenced and Corrupt Organization Act, or the Mail Fraud Act, for acts in connection with the submission of bids for public or private contracts; (4) been convicted of a violation of Section 14-308 of the State Finance and Procurement Article of the Annotated Code of Maryland; (5) been convicted of a conspiracy to private contract; (4) been convicted of a violation of

Section 14-308 of the State Finance and Procurement Article of the Annotated Code of Maryland; (5) been convicted of a conspiracy to commit any act or omission that would constitute grounds for conviction under any of the laws or statutes described herein; (6) been found civilly liable under an antitrust statute of the State of Maryland, another state or the United States for acts or omissions in connection with the submission of bids for public or private contracts.

6. Bidder hereby declares that this Bid Proposal is made without any connection or collusion with any person, entity or corporation making a Bid Proposal for the same work; that pursuant to this affidavit; that the attached specifications and any drawings referred to herein have been carefully examined and are understood; that careful examination has been made as is necessary to become informed as to the character and extent of the work required; and, that if this Bid Proposal is accepted, this Bidder will contract to do, for the price stated in the Bid Proposal, all of the work described in the specifications, drawings and contract conditions.

7. I acknowledge that this affidavit is to be furnished to the City Manager or designee for the City of Gaithersburg, Maryland. I further acknowledge that, if the representations set forth in this affidavit are not true and correct, the City of Gaithersburg may terminate any contract awarded and take any other appropriate action.

I do solemnly declare and affirm under the penalties of perjury that the contents of this affidavit are true and correct.

_____ _____

Signature Witness

_____

Date

NOTARY ATTESTATION

State of: _____

County of: _____

I hereby certify that on this _____ day of _____, 20_____, before me the subscriber, a Notary Public in and for the State of _____ and County aforesaid, personally appeared _____, known to me to be the person whose name is subscribed to this instrument and acknowledged that same was executed for the purposes contained therein.

Witness my hand and Notarial seal: _____

My Commission expires: _____

Notary Public: _____

Printed Name

City of Gaithersburg

Bid Form

Solicitation No. 2016-024

The Bidder shall complete this form in its entirety and return it with its Bid Proposal. The Bidder is expected to have reviewed the Solicitation Documents in their entirety and to understand all the requirements and work scope.

BID TO: Sean Stevens, Public Works Operations Administrator
City of Gaithersburg
Department of Public Works
800 Rabbitt Road
Gaithersburg, MD 20878

PROJECT: Hi-Arch Gambrel Salt Storage
Building 800 Rabbitt Road
Gaithersburg, MD 20878

BID FROM: _____
Bidder's Name

_____
Bidder's Address

_____ _____ _____
City State Zip Code

_____
Name of Contact

_____ _____
Phone Number Fax Number

1. **GENERAL**

The undersigned, having carefully examined the Contract Documents, all data made available, and having visited the site of the work and having become fully informed as to all existing conditions and limitations, including the structure of the ground, subsurface conditions, the obstacles which may be encountered, local restrictions, and all other relevant matters concerning the work to be performed, hereby propose to perform everything required to be performed, and to provide all the labor, materials, necessary tools and equipment, expendable equipment, all applicable taxes and fees, and provide all utility and transportation services necessary to perform and complete in a workmanlike manner the entire work in conjunction with the Design and Construction of a Salt Building at the City of Gaithersburg, Department of Public Works, located at 800 Rabbitt Road, Gaithersburg, Maryland 20878, in accordance with the contract documents, including addenda and amendments issued thereto.

2. **BASE BID**

The Bidder agrees to perform all work as set forth in the Solicitation Documents to provide all labor and materials to complete the project as specified, for the sum of:

_____ **Dollars ($_____).**

3. **REQUESTED ALTERNATES**

Shingle Roof: $_____

Bulk Road Salt (delivered to and loaded into building): $_____

4. **VOLUNTARY ALTERNATES**

The undersigned hereby proposes to execute all work required, provide all labor, materials, necessary tools, expendable equipment, all applicable taxes and fees, bond fee as required, and to provide all utility and transportation services necessary to perform and complete, in a workmanlike manner, the following voluntary alternatives:

For providing _____

_____

in lieu of _____

_____

add/deduct _____

_____ ($_____)

This voluntary alternative is offered because:

_____

_____

Attached are additional voluntary alternatives:

_____

_____

5. **TIME OF COMPLETION**

If awarded the contract, the undersigned agrees to complete same by October 1, 2016 or no later than the dates noted in the specification below.

Signature: _____ Date: _____

Print Name: _____

Title: _____

City of Gaithersburg

Bid Proposal Submission Certification

Solicitation No. _____

Please complete this form in its entirety and include it with your Bid Proposal. For the purpose of completing this form, "entity" means an individual, sole proprietor, partnership, corporation, limited liability corporation (LLC), company, or association.

Name of Entity: _____

Contact Person: _____

Street Address: _____

_____

City, State & Zip Code: _____, _____ _____

Telephone Numbers: (P) _____ (F) _____

BID PROPOSAL SUBMISSION CERTIFICATION

The response to Solicitation No. _____ as submitted includes this Bid Proposal Submission Certification Form and the Affidavit of Qualification to Bid Form, Conflict of Interest Certification Form, and Litigation and Lien Information Form. I, the undersigned, hereby attest to the truth and completeness of the information and responses provided and certify that my entity has met the minimum selection criteria as outlined in the Solicitation document.

_____ _____

Signature Witness

_____

Date

NOTARY ATTESTATION

State of: _____

County of: _____

I hereby certify that on this _____ day of _____, 20_____, before me the subscriber, a Notary Public in and for the State of _____ and County aforesaid, personally appeared _____, known to me to be the person whose name is subscribed to this instrument and acknowledged that same was executed for the purposes contained therein.

Witness my hand and Notarial seal: _____

My Commission expires: _____

Notary Public: _____

Printed Name

City of Gaithersburg

Conflict of Interest Certification

Solicitation No. _____

Please complete this form in its entirety and include it with your Bid Proposal. For the purpose of completing this form, "entity" means an individual, sole proprietor, partnership, corporation, limited liability corporation (LLC), company, or association.

*Does not apply to individuals or sole proprietors – indicate with "N/A"

Name of Entity: _____

* Federal ID No: _____

Contact Person: _____

Street Address: _____

_____

City, State & Zip Code: _____, _____ _____

Telephone Numbers: (P) _____ (F) _____

(P) _____ (C) _____

Email Address: _____

Email Address: _____

CONFLICT OF INTEREST CERTIFICATION

I HEREBY CERTIFY, on behalf of _____ that no
Name of Entity
employee, agent or elected official of the City of Gaithersburg, or member of a commission, board or corporation controlled or appointed by the Mayor and Council of the City of Gaithersburg has received or has been promised directly or indirectly, any financial benefit by way of fee, commission, finder's fee, or in any other manner, remuneration directly or indirectly related to this contract. Upon request by the City Manager or designee, or other authorized agent, as a prerequisite to payment pursuant to the terms of a contract awarded pursuant to this Bid Proposal submission, will furnish to the City, under oath, answers to any interrogatories and comply with any request to review documents related to a possible conflict of interest as herein embodied.

I HEREBY CERTIFY, on behalf of _____ that no
Name of Entity
employee or agent of _____ is a member, employee,
Name of Entity
or elected official of the City of Gaithersburg of any agency, commission, or board of the City of Gaithersburg or is the spouse or any other relative of any of the foregoing. If unable to so certify, the details of any such relationship with the City of Gaithersburg are as follows:

_____

_____

_____

I do solemnly declare and affirm under the penalties of perjury that the contents of this affidavit are true and correct.

_____ _____

Signature Witness

_____

Date

NOTARY ATTESTATION

State of: _____

County of: _____

I hereby certify that on this _____ day of _____, 20_____, before me the subscriber, a Notary Public in and for the State of _____ and County aforesaid, personally appeared _____, known to me to be the person whose name is subscribed to this instrument and acknowledged that same was executed for the purposes contained therein.

Witness my hand and Notarial seal: _____

My Commission expires: _____

Notary Public: _____

Printed Name

City of Gaithersburg

Litigation and Lien Information

Solicitation No. _____

Please complete this form in its entirety and include it with your Bid Proposal. For the purpose of completing this form, "entity" means an individual, sole proprietor, partnership, corporation, limited liability corporation (LLC), company, or association.

Name of Entity: _____

Street Address: _____

_____

City, State & Zip Code: _____, _____ _____

Telephone Numbers: (P) _____ (F) _____

LITIGATION INFORMATION

Is your entity currently involved in any litigation or had a litigation claim(s) within the previous twenty-four (24) month period?

☐ Yes / ☐ No

If yes, please provide a detailed list including case number, jurisdiction, status and brief summary of such litigation.

Case Number	Jurisdiction	Status	Summary

LIENS

Does your entity have any outstanding mechanics liens?

☐ Yes / ☐ No

If yes, please explain: _____

_____

Does your entity have any outstanding tax liens?

☐ Yes / ☐ No:

If yes, please explain: _____

_____

_____ _____ _____

Signature Title Date

_____

Printed Name

REQUEST FOR BIDS

NO. 2016-024

HI-ARCH GAMBREL SALT STORAGE BUILDING

ATTACHMENT B

Planning Commission Amendment
To Final Plan Approval

STAFF COMMENTS FOR PLANNING COMMISSION

MEETING DATE: June 17, 2015

SITE PLAN: **AFP-7038-2015**

TITLE: **Public Works Department**

REQUEST: **AMENDMENT TO FINAL PLAN APPROVAL**
For 5,488 Square Foot Salt Building

ADDRESS: 800 Rabbitt Road

ZONE: R-A (Low Density Residential) Zone

Applicant: City of Gaithersburg, Sean Stevens & Mark Scafide

Owner: City of Gaithersburg

Engineer: KCI Technologies, Tim Miller

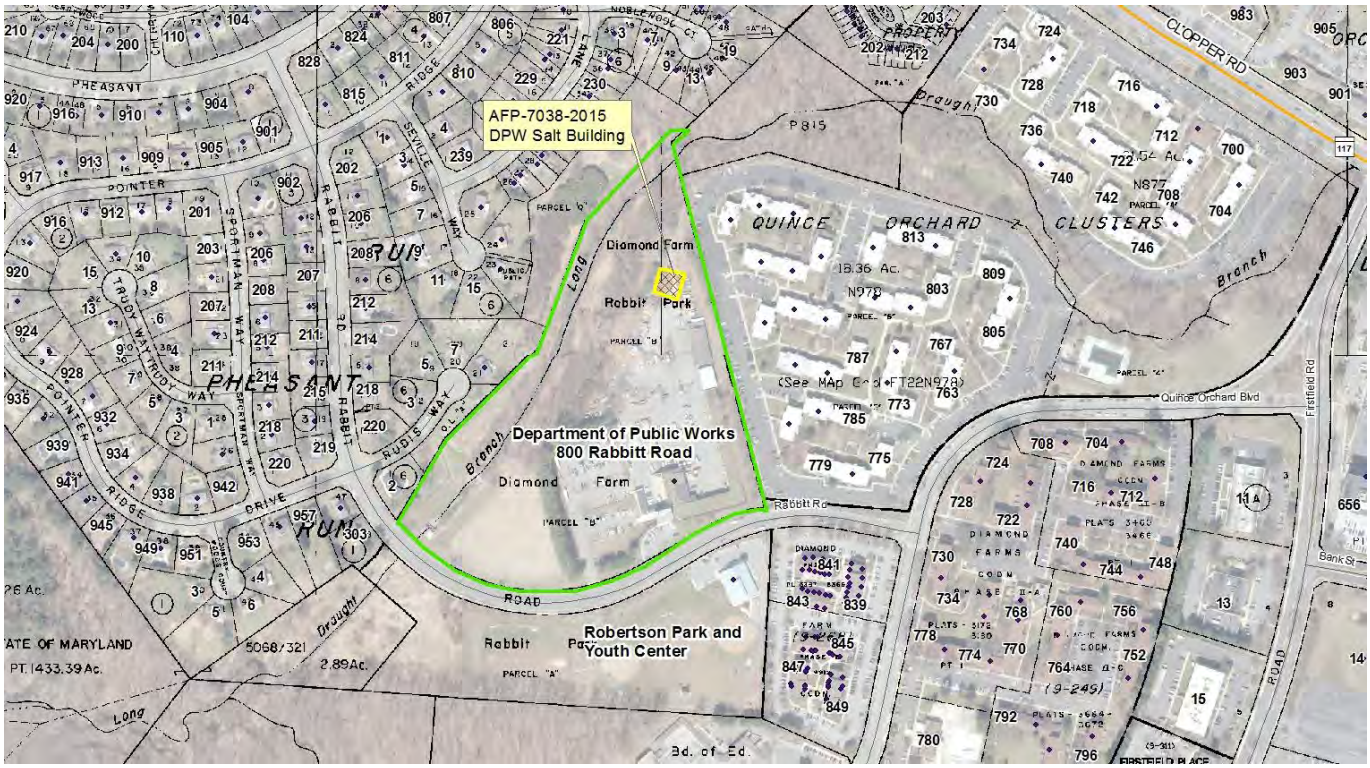
STAFF PERSON:

Enclosures:

Staff Comments
Exhibits

Exhibit 1: [Just type and hit return to add additional exhibits]
Exhibit 2:

LOCATION MAP



STAFF COMMENTS

I. BACKGROUND

An application has been filed for an Amendment to Final Site Plan, AFP-7038-2015, for a new 5,488 square foot Salt Building. The property is located at 800 Rabbitt Road and zoned R-A (Low Density Residential).

II. SCOPE OF REVIEW

This application comes before the Planning Commission because § 24-172A requires the Planning Commission to grant amendments to approved final site plans. The applicant is proposing to amend final site plan AFP-07-035 and AFP-6951-2015.

III. SITE PLAN ANALYSIS AND REVIEW

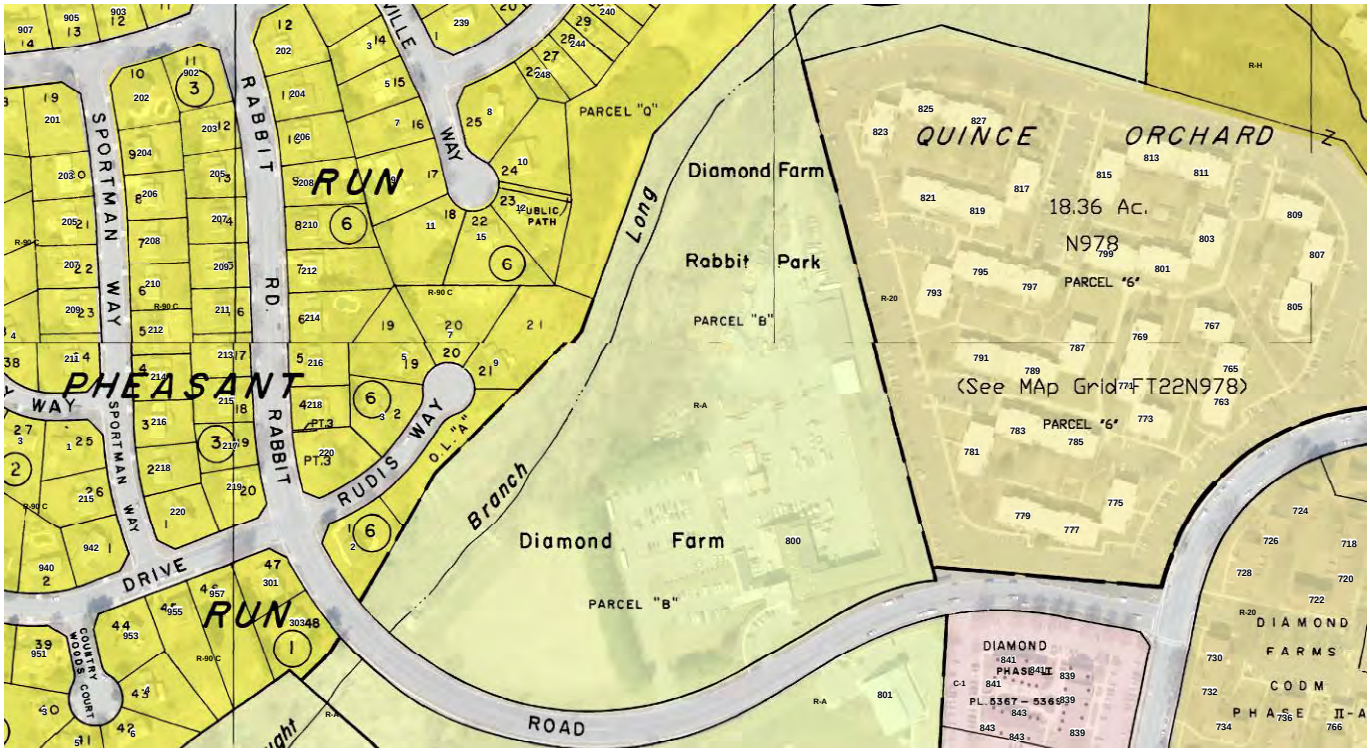
In accordance with §24-172A, the Planning Commission has the authority to review and make determinations regarding proposed amendments to site plans for the purpose of protecting the public health, safety, and general welfare. Section 24-170 outlines the findings for the approval of the site plan. Staff provides the following comments and findings for the Planning Commission's consideration.

History

The subject property received approval (S-622) in 1979 and constructed in 1981. The property was designed by City Engineer George (Dutch) Kelley with energy saving techniques (first green roof in Gaithersburg) as well as the concerns for visual and noise impact on the surrounding residential areas. Due to its being built into the side of a hill, most of the building and industrial–type operations are hidden from street level, and the building appears no taller than a two-story house. Green areas on the majority of the property boundaries buffer the complex from the surrounding residential uses. The property has been amended several times to add buildings as the Department of Public Works has expanded to handle a growing City.

Surrounding Land Use and Zoning

The surrounding land use to the west is single-family detached homes and zoned R-90 Cluster and garden apartments are located to the east in the R-20 Zone. To the south of the subject property is the Robertson Park and Youth Center. The adjacent zoning designation for the properties to the north and west is R-90C (Medium Density Residential Cluster). The properties (The Eaves) to the east are zoned R-20 (Medium Density Residential). Lastly, the properties (Robertson Park) to the south are zoned R-A (Low Density Residential).



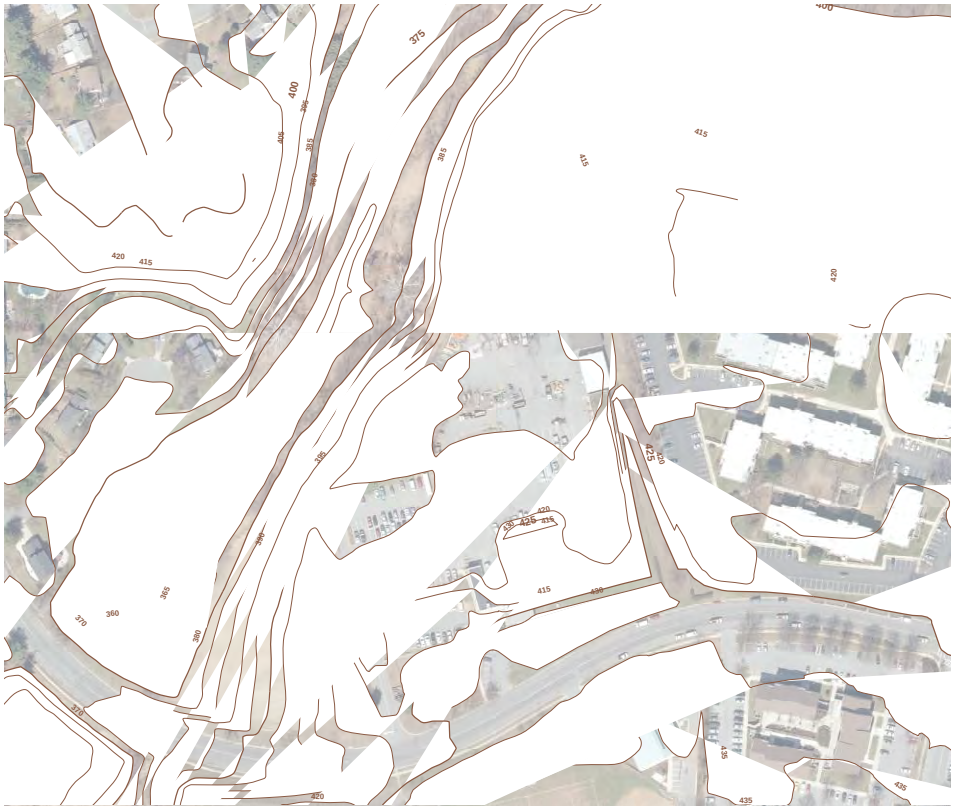
Zoning Map

Site Characteristics

The subject property is a 17.26 acre lot that consists of the Public Works facility building and storage yard. The existing Public Works building is approximately three-stories. Due to its topography and the building built into a hill, two floors and most of storage facilities are hidden from the Rabbitt Road street level. The property was developed to have the Public Works yard area in a bowl with buildings and berms surrounding the area.

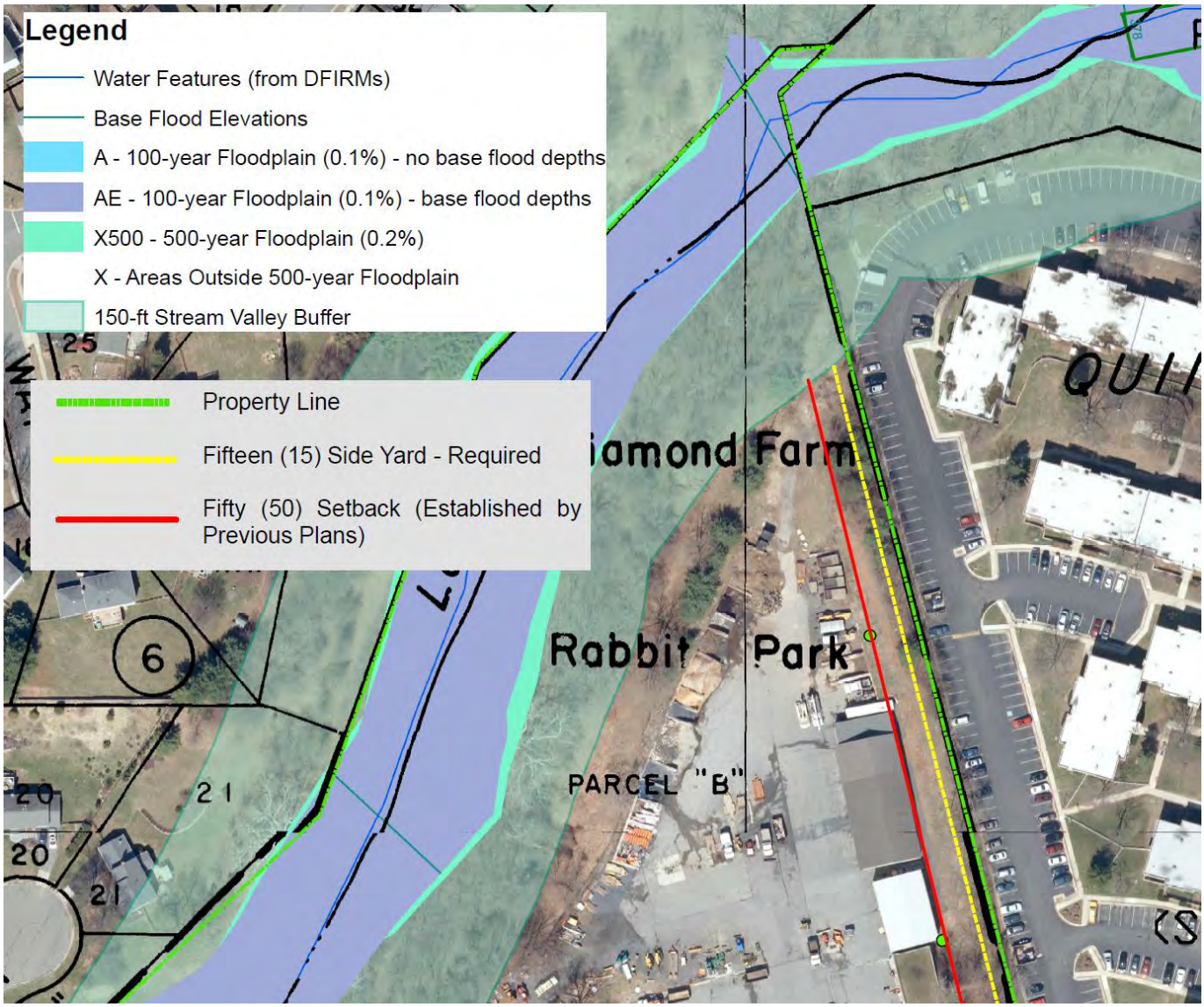
Rabbit Road Street View of Public Works – 800 Rabbitt Road

Oblique of Public Works from the North



Topography of the Site

Additionally, there are several development constraints surrounding the yard area that have been added since the site was constructed in the late 1970's. This includes floodplain areas and stream valley buffers.



Development Constraints

Adequate Public Facilities Ordinance

Traffic: The development of the Salt Building will not increase the number of trips by Department of Public Works. The building will be used by the existing Public Works employees and would not generate more than thirty (30) peak hours.

Water & Sewer: The employees will use the existing facilities in the Public Works building. Therefore, no increase in water or sewage flows is expected.

Emergency Services: The subject property is served within ten (10) minute response

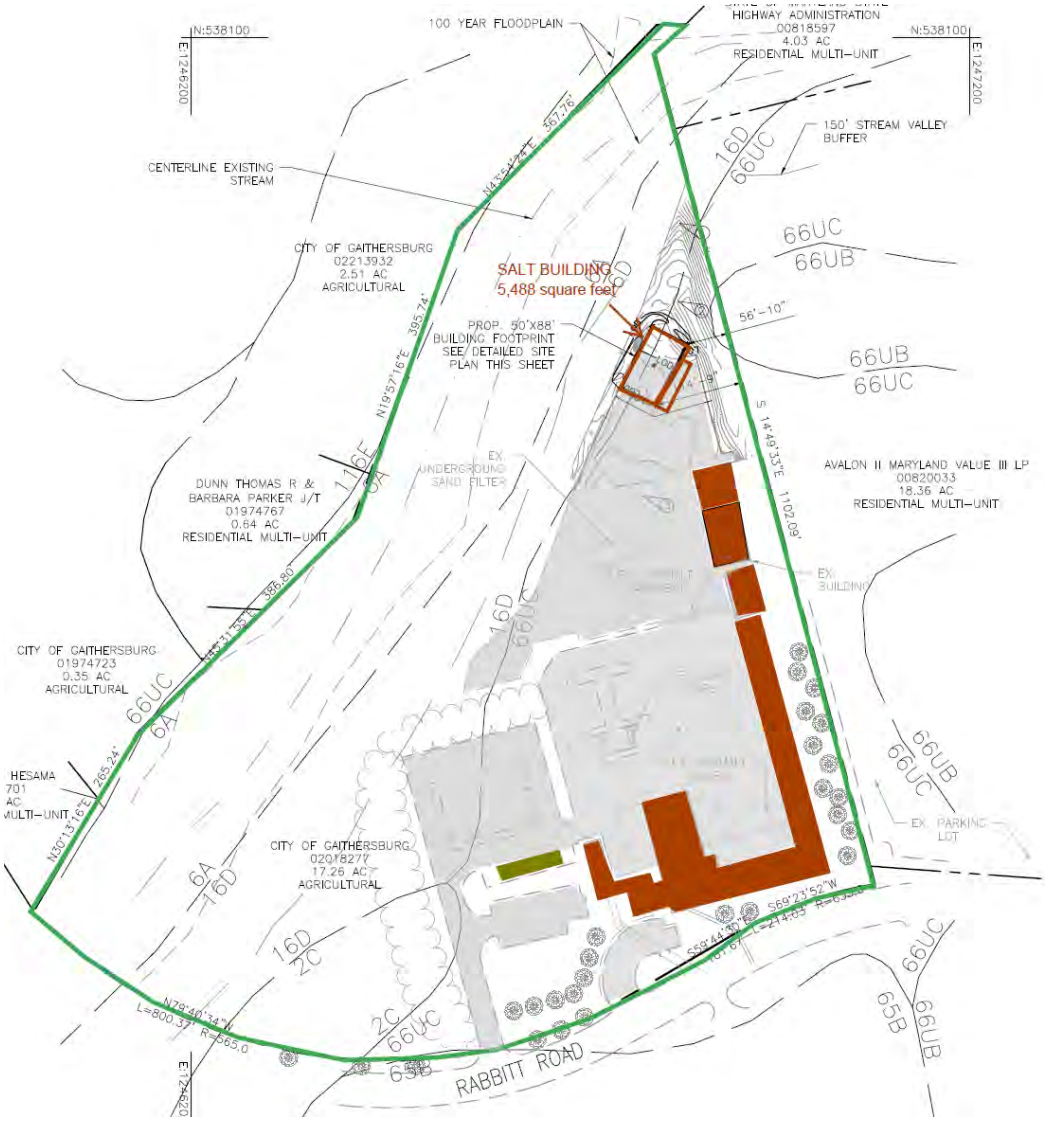
areas of Montgomery County Fire Station 8, 22 and 31. This fulfills the requirement for adequate emergency services.

Proposed Salt Building

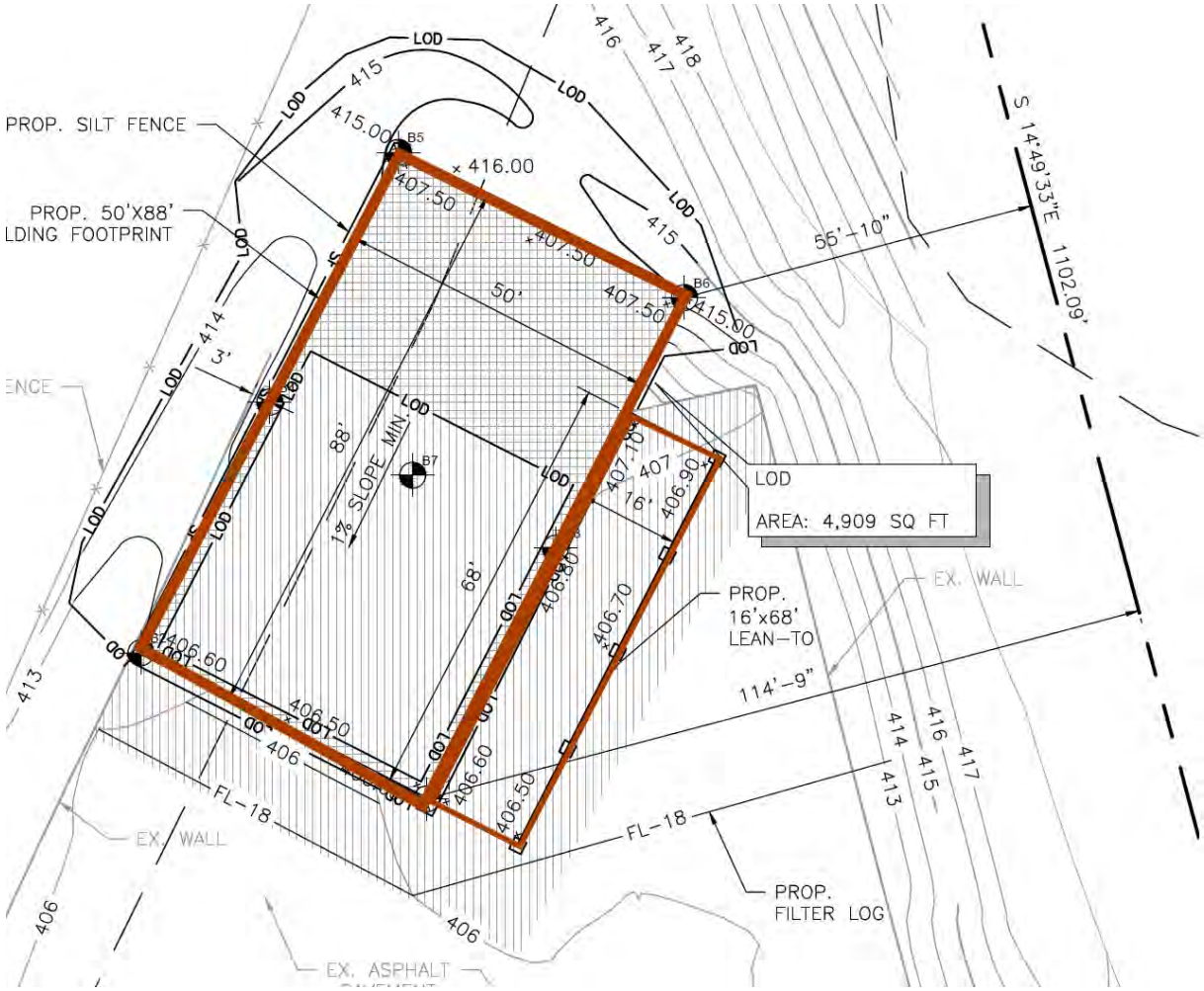
Oblique view of Public Works Yard, location of proposed Salt Building

View of Location

The Department of Public Works is proposing to build a larger salt storage building. This will allow the City to store a two year supply of salt. Currently the existing building only holds enough for an average year. The City has been dependent on the State for salt for the last two years of above average snowfall because of the limited area that is exists for the storage of salt on site. Please note that the salt is required to be in a covered building. The proposed 88 feet by 50 feet building contains 4,400 square feet. There will also be "lean-to" area of 16 feet by 68 feet to storage vehicles that are loaded with salt. The lean-to is open with a roof and covers 1,088 square feet in area. The ability to pre-load the vehicles will allow for a greater efficiency in the treatment of City streets in a snow storm event. The proposed building maintains a 55 foot – 10 inch setback from the eastern property line, similar to the established setback of other buildings along this property line. The R-A Zone requires a minimum side yard setback of 15 feet. The proposed building is located over 300 feet from the western and northern property line.



Site Plan



Enlarged Site Area

Building

The City will be conducting a Request for Proposal (RFP) for the design/build of a high-arch gambrel salt storage building. The RFP will require that the walls be concrete with wood siding and metal roof with an Alternate of having a 30-year architectural shingle roof. The height of the concrete wall is approximately 12 feet. The color of the wood siding above the wall will have a similar putty/beige color of the other buildings at PW. The height of the building is 39 feet 10 inches to the peak (ridge) of the roof. According to the zoning ordinance, the building height is measured at the mean height level between eaves and ridge of a gable, hip or gambrel roof, therefore the height is approximately 26 feet. (The Eaves garden apartments are 3-story units.)

Once the RFP is awarded, the contractor will submit final drawings to Public Works and Permits for approval and permit. Staff recommends that a condition be added that the final construction drawings come back to the Planning Commission as a Consent Approval prior to the issuance of a building permit.

Typical Building with Lean-to Addition (wooden wall)

Concrete Wall as required by Public Works

IV. SUMMARY OF FINDINGS:

Staff finds that the proposed 5,888 square foot Salt Building at Public Work is consistent with the existing architecture and will not adversely affect the aesthetics of the current Public Works Facility. the addition of this storage building is necessary for the functioning of the Department of Public Works (DPWPM&E). The building meets the requirements of the R-A Zone pertaining to permitted uses, lot coverage by buildings, and green space; and blends well into the existing complex. The location has been strategically placed to so that there will be a year round landscape buffer between building and the surrounding neighborhood.

V. CONCLUSION:

Staff recommends that the Planning Commission **GRANT COURTESY REVIEW FOR AMENDMENT TO FINAL PLAN AFP-7038-2015, FINDING IT IN CONFORMANCE WITH §24-170 AND §24-172A OF THE CITY'S ZONING ORDINANCE, WITH ONE (1) CONDITION.**

1) **Applicant to submit final building elevations for a Planning Commission Consent Approval prior to the issuance of a building permit.**

REQUEST FOR BIDS

NO. 2016-024

HI-ARCH GAMBREL SALT STORAGE BUILDING

ATTACHMENT C

GeoTechnical Report, prepared by Herbst/Benson and Associates, dated April 30, 2015 (Rev# 5/21/15)

SALT STORAGE BARN
GAITHERSBURG DPW CENTER
GAITHERSBURG, MARYLAND

HERBST/BENSON & ASSOCIATES
GEOTECHNICAL ENGINEERS

Herbst/Benson & Associates
Geotechnical Engineers

414 Main Street
Reisterstown, Maryland 21136
(410) 526-7200
(800) 800-0275
Fax (410) 526-7268

April 30, 2015
(Rev#1 5/21/15)

KCI Technologies, Inc.
11850 West Market Place
Suite A
Fulton, Maryland 20759

Attention: Mr. Tim Miller
Senior Associate/Office Manager

Re: Salt Storage Barn **(Rev#1 revise wall height Section VI)**
Gaithersburg DPW Center
Gaithersburg, Maryland

Gentlemen:

We have completed the authorized geotechnical study for the above-referenced proposed road salt storage barn to be constructed within the Gaithersburg DPW Center. The purpose of the study has been to determine 1) appropriate geotechnical design criteria and construction recommendations for the proposed salt barn foundations; 2) compaction properties of sampled near surface soils; and 3) recommended heavy-duty pavement section for the project based upon CBR values estimated from soil classifications and compacted density. We were also asked to provide lateral earth pressure criteria for construction of the rear wall line, which will be cut into an existing slope. The methods of explorations tests, the subsurface data, the laboratory test results, and our conclusions and recommendations concerning the geotechnical aspects of the proposed construction are presented in the following sections of the report.

I. SUBSURFACE PROGRAM

The subsurface exploratory program consisted of seven standard penetration test (SPT) borings drilled with a truck-mounted rig at the approximate locations shown on PLATE 1, BORING LOCATION PLAN. Borings were advanced using hollow stem, continuous flight helical augers. All borings terminated above the 30-foot planned termination depths. Auger refusal on highly resistant material was encountered in all borings at depths as shallow as 6 feet in boring B-2 to as deep as 18.5 feet in boring B-6, or at the approximate elevation range of 395 to 400. Standard penetration testing and split-spoon soil sampling were performed at regular intervals as the borings were advanced.

The information obtained from the test borings is presented on PLATES 2 and 3, BORING PROFILES. The method of classification used to prepare the soil descriptions shown on the boring profiles, is presented on the enclosure CLASSIFICATION OF SOILS, included in the back of this report.

II. LABORATORY TESTING

The two recovered bulk soil samples were both classified in the laboratory by sieve gradation and Atterberg limits testing. One sample was selected for further testing, including existing moisture and moisture/compacted density relationship to evaluate compaction properties. Existing moisture content testing was performed on the recovered split-spoon soil samples. Additionally, a near surface soil sample was subjected to classification testing by sieve gradation and Atterberg limits tests. The results of these tests are presented as follows:

TABLE 1, CLASSIFICATION TEST DATA
SHEET 1, COMPACTION TEST
PLATES 2 and 3, BORING PROFILES (existing moisture on left side of boring column at appropriate sample depth)

III. SITE DESCRIPTION

The study site is located in the Gaithersburg Department of Public Works Center, located in the north end of the City of Gaithersburg in Montgomery County. The specific site is at the north end of the DPW Center in an area used as a storage yard. Parts of the yard include bins for various construction materials, constructed of concrete mega-block walls. A retaining wall is located at the very north end of the site, transitioning the flattened yard area to the original slope.

The existing grades presently range in elevation from 406 to 409 over most of the proposed length of the building, with a steeper 2:1 slope from elevation 409 to elevation 413.5 at the extreme northeast corner of the proposed building footprint.

IV. SUBSURFACE MATERIALS

The surface cover in the area varies from topsoil in borings B-3, B-5 and B-6, to hot mix asphalt and/or crushed stone paving ranging from approximately 1 foot thick in borings B-1, B-4 and B-7, and 2 inches thick in boring B-2. No existing fill has been encountered within the test borings below the surface layers.

The underlying native soils are residual in origin, having been formed from in-place weathering and decomposition of the underlying metamorphic schist bedrock, although the residual soil types indicate that the underlying bedrock may be an unmapped Phyllite subgroup. The soil types range from medium dense sandy silts, as found in the upper portions of borings B-3, B-4, B-5 and B-6, to very dense disintegrated rock being sampled as rock fragments with little sand or little silt, typically found near the bottom of the test borings, although boring B-2 exclusively found the sandy rock fragment material.

Very dense disintegrated rock, defined as materials having a standard penetration resistance equal to or greater than 100 blows per foot, was encountered below a depth of 8 feet in boring B-1, about 3 feet in B-2 and B-7, 10 feet in B-4, and 8 feet in boring B-5. Auger refusal, typically indicating the presence of hard or slightly disintegrated rock, was encountered in all seven borings, ranging in depth from as shallow as 6 feet in boring B-2, to as deep as 18.5 feet in boring B-6. It is interesting to note, however, that the refusal depths all fall within an approximate 5 to 7-foot elevation range, from about elevation 395 to about elevation 400.

The (Decomposed Rock) notation indicates that the relic structure of the parent bedrock could be observed in the recovered soil samples. It does not necessarily indicate hard or rock-like conditions, which are better indicated by the SPT values and auger refusal.

V. GROUNDWATER

Groundwater was neither encountered nor indicated within the test borings, either during, at completion of, or one day following completion of drilling operations.

These readings represent conditions at time of the test boring program. Groundwater levels will tend to vary with changes in seasons and precipitation, typically rising through the late winter, spring and early summer seasons, and receding throughout the remainder of the year.

VI. PROPOSED CONSTRUCTION

It is our understanding that the salt barn will have **12**-foot high reinforced concrete walls, followed by post and beam wood walls and a wooden roof. We are assuming that with a continuous concrete wall, a continuous reinforced concrete footing will be constructed.

The finished floor grade will slope slightly from back to front, between elevations 406.5 at the entrance to 407.4 at the rear wall, forming a 1 percent grade. Over most of the building footprint, this would require only very minimal cuts and fills. Towards the rear of the building, however, cuts will increase upwards of 2.5 feet deep at the northwest corner and up to 6 feet deep at the northeast corner. It is our understanding that rather than a separate site retaining wall, the rear wall of the salt barn will also act as a retaining wall. The floor of the facility will be paved.

VII. BUILDING SUPPORT RECOMMENDATIONS

A. Footings

Considering the subsurface conditions in conjunction with the proposed construction, we recommend that the concrete salt barn walls be supported on normal shallow footings founded in competent undisturbed native soils and proportioned for a maximum allowable soil bearing pressure no more than 3 KSF. Footing dimensions should also meet the structural and building code requirements; thus, the actual applied pressures may be less than the 3 KSF maximum.

Since the building will be unheated, all footings, including minor interior footings, should be founded at least to the minimum depth as per local code for protection from detrimental frost action (typically 30" in the central Maryland area). For continuity of support over minor variations in soil supporting quality, we would recommend the inclusion of at least two #5 steel reinforcing bars. Structural requirements, however, may indicate the need for added reinforcement.

We recommend that footing concrete be placed the same day footings are excavated, reinforced and approved. Delay of concrete placement can result in softening, freezing or saturation of the exposed soils, requiring that the disturbed materials again be scraped from the bottom of the footing to expose acceptable bearing materials immediately prior to concrete placement.

B. Grade Slab

We do not recommend the use of a concrete grade slab in this structure due to the highly corrosive stockpiled salt and the expected differential settlement between the areas below the highest portion of the stockpile

and those around the edges of the stockpile. A rigid floor covering is more likely to crack under these load conditions, while a flexible pavement is more likely to bend. The floor covering typically used in these salt barns is an asphalt pavement; recommendations for which will be outlined later in this report.

Since the stockpiled salt will exert pressure equal to or greater than that of the structure itself, we recommend that prior to placement of the base course of the paving, the exposed soil subgrade consist of undisturbed native materials or controlled compacted GAB aggregate placed over undisturbed native soil capable of supporting an applied pressure of 2.5 KSF.

C. Lateral Earth Pressure Parameters

Given the information on the soils in the slope area and assuming that the backfill and foundation drain construction will be as shown on the attached PLATE WD, WALL DRAIN BACKFILL AND DETAILS, we recommend the following lateral earth pressure parameters for the walls retaining soil.

Total Unit Weight:	130 PCF
Friction Angle:	29°
Cohesion:	0
Coefficient of Friction: (Footing concrete against competent native soils)	0.42
*Active Earth Pressure: (Unrestricted rotation at top of wall)	45 PSF/ft.
*At Rest Earth Pressure: (Restricted rotation at top of wall)	65 PSF/ft.

The soil parameters assume the use of on-site soils for backfill and no build up of hydrostatic pressure. Applied lateral pressures will be greater if the backfill surface behind the wall remains sloped, with the increase in pressure depending upon the proposed slope inclination. If the ground

remains sloped behind the wall, a sloped swale should be added behind the wall to direct slope runoff away from the wall.

D. Barn Floor

We recommend the barn floor consist of an asphalt/crushed stone paving section. Although there is no specific traffic category, we are anticipating heavy loaded vehicles, either front end loaders or end dump trucks within the facility, and consequently, we would suggest a heavy-duty traffic category. For a subgrade of the on-site AASHTO A-4, A-2-4, and possibly A-5 soil types, we are assuming a fair to poor subgrade strength when properly compacted. With the subgrade compacted to 100 percent of the AASHTO T-99 maximum dry density, we are assuming a CBR value of 3 to 5 for pavement design. For these soil types, the following heavy-duty pavement section is recommended:

2" Hot Mix Asphalt Surface (12.5mm Superpave, Level 2)
5" Hot Mix Asphalt Base (19mm Superpave, Level 2; placed and compacted in 2 lifts of equal thickness)
10" Graded Aggregate (GA Base)
Approved Compacted Subgrade

Approved compacted subgrade consists of a firm, unyielding soil surface, compacted to a minimum 100 percent of the AASHTO T-99 maximum dry density. Materials and construction procedures shall conform to MSHA specifications.

VIII. EARTHWORK

Any fill within the building pad area should be placed and compacted in accordance with APPENDIX I, COMPACTED FILL. The following procedures are recommended for filling in various areas of the project.

A. Building Pad Area

1. Prior to placing any fill within the building area, remove any surface paving or other materials to expose the underlying native soils.

2. Proofroll the exposed undisturbed native soil surface, and undercut any soft, yielding areas to firmer ground.

3. Place fill as outlined in APPENDIX I, COMPACTED FILL using GAB stone aggregate.

4. Immediately prior to placing the crushed stone base for the pavement floor, rework the subgrade as necessary to a firm, unyielding condition, and to at least 100 percent of the AASHTO T-99 maximum dry density.

B. Wall Backfill

Wall backfill types and compaction shall be as outlined on PLATE WD.

IX. EXCAVATION CHARACTERISTICS

Rock-type excavation characteristics can be expected if trenching below a depth of 8 feet in boring B-1, 3 feet in boring B-2 and B-3, 10 feet in boring B-4, 8 feet in boring B-5, 18 feet in boring B-6, and 3 feet in boring B-7.

No groundwater was encountered or indicated within the test boring depths; thus, we do not expect this to be a factor in either design or construction.

X. GEOTECHNICAL MONITORING & TESTING

We recommend that Herbst/Benson & Associates be retained to provide the geotechnical monitoring and testing services during the site grading and foundation construction phases of the work. This is to observe compliance with design concepts, specifications or recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to the start of construction.

The earthwork construction including stripping, undercutting, proofrolling and controlled fill placement shall be inspected with in-place density tests taken to verify construction according to the specifications. The exposed soil conditions exposed in the footing excavations and at paving subgrade shall be approved for the design bearing. We can provide the indicated geotechnical monitoring and testing services upon request.

XI. GENERAL CONDITIONS

This report has been prepared in accordance with generally accepted geotechnical engineering practice to aid in the evaluation and design of this project. In the event of changes in the proposed construction (types, elevations,

locations, etc.) the conclusions and recommendations presented in this report should not be considered valid unless changes are reviewed and the conclusions of this report are modified or approved in writing by our office.

The analyses and recommendations included in this report are based upon the data obtained from the test borings performed at the approximate locations indicated on the boring location plan. This report does not reflect variations which may occur between or away from the borings. The nature and extent of the variations may not become evident until the time of construction. If significant variations then become evident, it may be necessary for us to reevaluate the recommendations of this report.

We appreciate the opportunity to provide a geotechnical study for the proposed salt storage barn in the Gaithersburg DPW center. We will be available to provide additional consultation services as needed, and hope to have the opportunity to follow the project through construction by providing the geotechnical monitoring and testing services. Please do not hesitate to contact us should you, the client, the building supplier or any of you sub-consultants have any comments or questions.

Most Sincerely,

HERBST/BENSON & ASSOCIATES

Robert C. Benson
cn=Robert C. Benson, o=Herbst/Benson & Assoc., Inc., ou, email=bensonr@herbst-benson.com, c=US
2015.05.21 15:59:49 -04'00'

By: Robert C. Benson, P.E.
Principal

RCB/smh
15025MD

APPENDIX I
COMPACTED FILL

A. Embankment shall be constructed of approved materials from the excavation or from other sources. The material shall be free from organic materials, trash, muck, roots, frost and other deleterious substances.

B. Before depositing fills, the ground surface shall be cleared of all refuse, brush, grass, roots, ice and frozen material. All organic matter and otherwise unsuitable soils shall be removed from the surface to be filled. The exposed surface shall be plowed or scarified if required to a depth of six inches. Soils so scarified, or which have been disturbed by grubbing and stripping operations, shall be compacted to undisturbed soil below by discing, leveling, rolling, and compacting at the moisture content and to the density specified below for compacted embankments.

C. Where fills are made on hillsides or slopes, the slope of the original ground upon which the fill is to be placed shall be plowed or scarified deeply, or where the slope ratio of the original ground is steeper than 5 horizontal to 1 vertical, the bank shall be stepped or benched, when considered necessary by the Engineer, to permit placement of the fill in horizontal layers.

D. Placing, Spreading and Compacting Fill Materials:

1. The fill materials shall be placed in layers which, before compaction shall not exceed 8 inches with the exception of clay soils which shall be placed and compacted in maximum 6-inch thick loose lifts. Each layer shall be spread uniformly and evenly and shall be thoroughly blade mixed during the spreading to insure uniformity of materials in each layer and individual rock pieces or soil clumps no greater than half the loose lift thickness.

2. After each layer has been placed, mixed and spread evenly, it shall be thoroughly compacted to not less than 95% of the maximum dry density as determined by ASTM D 698.

3. The moisture content of the fill shall be as required in order to attain the degree of compaction specified.

4. Compaction shall be by approved multiple-wheel pneumatic tired rollers, vibratory rollers or other types of acceptable rollers.

5. The filling operation shall be continued as specified above until the fill has been brought to the subgrade shown on the plans.

6. The fill shall be constructed in such a manner that the surface will be sloped to drain at all times, and all fill shall be deposited to prevent excessive moisture accumulation from rainwater.

7. When the work is interrupted by rain, filling shall not be resumed until tests indicate that the moisture content and density of the top 6 inches of fill conform to the above specification requirements.

SALT STORAGE BARN
GAITHERSBURG DPW CENTER
GAITHERSBURG, MARYLAND
15025MD APRIL 2015

TABLE 1

CLASSIFICATION TEST DATA

Sieve/Particle Size	% by Weight Passing Indicated Size		
	B-1 (1.0'-10.0')	B-4 (1.0'-2.5')	B-6 (1.0'-6.0')
1"		100	
3/4"	100	81	100
1/2"	99	60	99
3/8"	99	52	98
#4	97	42	94
#10	93	36	88
#40	85	30	79
#60	80	28	74
#200	59	23	58
Atterberg Limits			
Liquid Limit (LL)	28	40	34
Plasticity Index (PI)	3	10	6
Classification			
Unified	ML	GM	ML
AASHTO	A-4(0)	A-2-4(0)	A-4(2)
Natural Moisture Content (%)	12.9	9.4	14.0

COMPACTION TEST

PROJECT = Gaithersburg Salt Dome

SAMPLE IDENTIFICATION = B-1 (1.0'-10.0')

CURVE NUMBER = 1, 15025MD DATE = 4/15

MAXIMUM DRY DENSITY (PCF) = 116.0

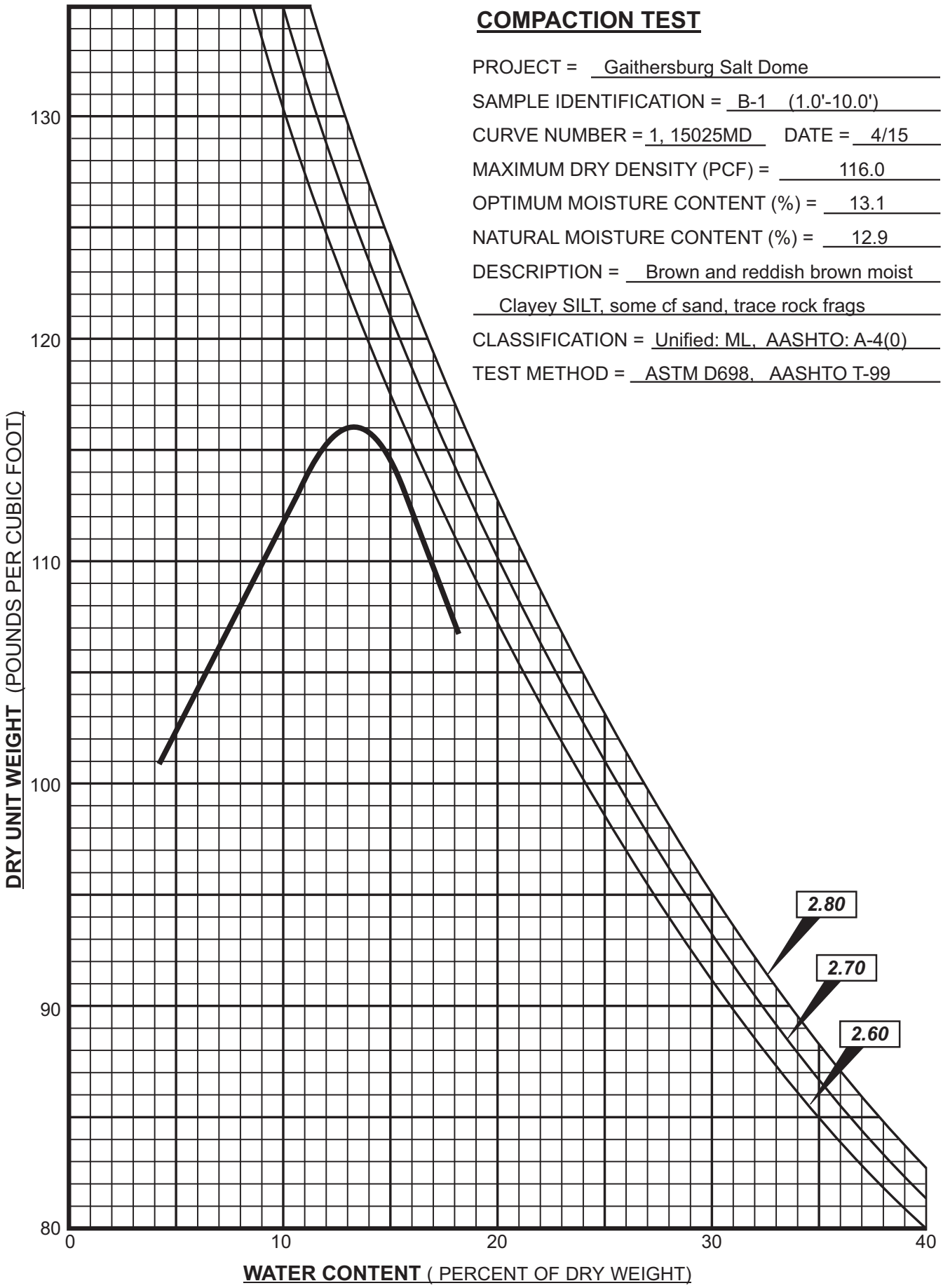
OPTIMUM MOISTURE CONTENT (%) = 13.1

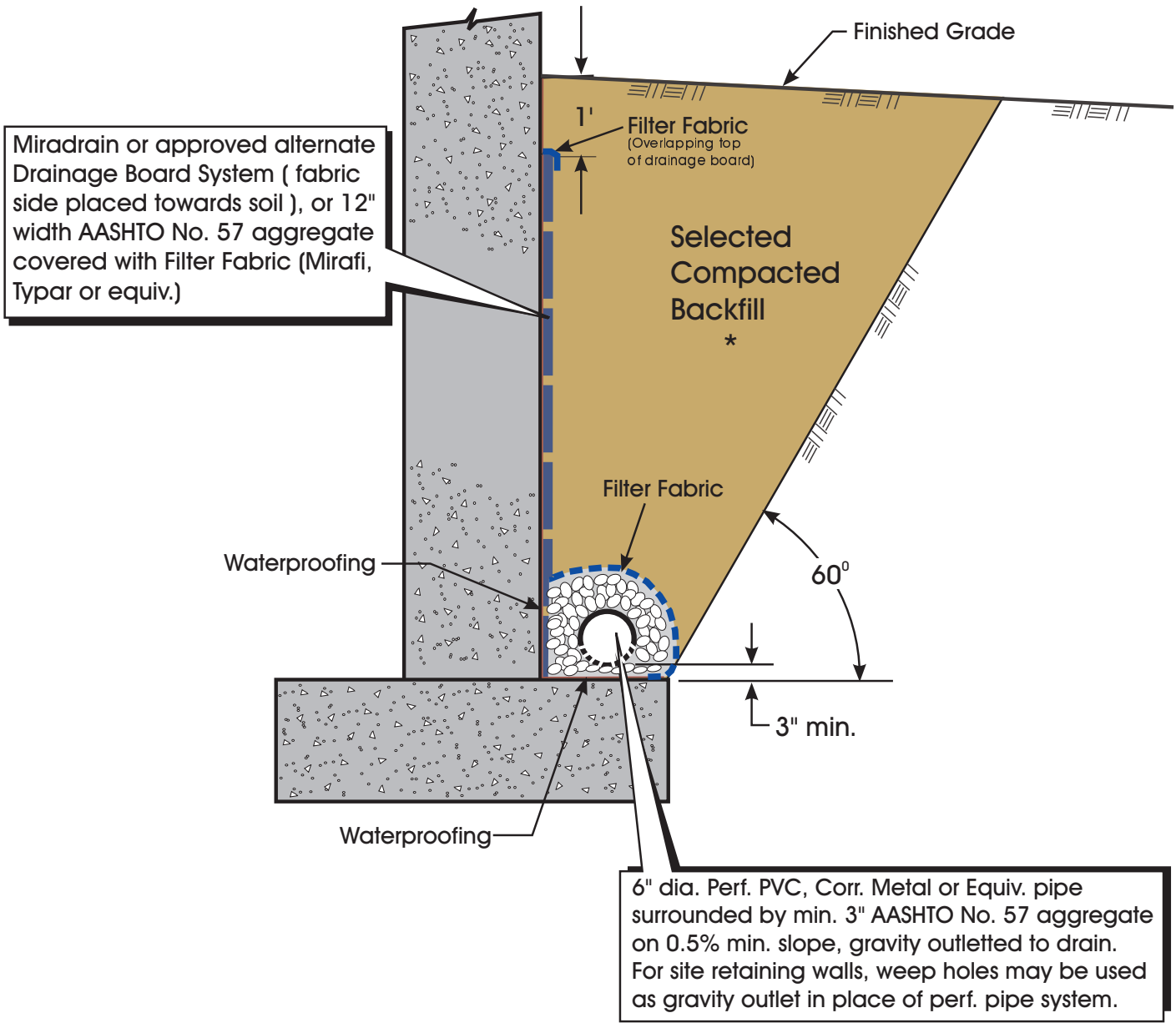
NATURAL MOISTURE CONTENT (%) = 12.9

DESCRIPTION = Brown and reddish brown moist Clayey SILT, some cf sand, trace rock frags

CLASSIFICATION = Unified: ML, AASHTO: A-4(0)

TEST METHOD = ASTM D698, AASHTO T-99





* Wall backfill to be clean soil conforming to Unified (GW, GP, GM, SW, SP, or SM) Classification. Soil with SC or ML classification with PI < 10 and < 65% p #200 sieve also acceptable subject to laboratory testing. The soil shall be placed and compacted in accordance with APPENDIX 111, COMPACTED FILL.

SALT STORAGE BARN GAITHERSBURG DPW GAITHERSBURG, MARYLAND	NOT TO SCALE 15025MD APR., 2015	WALL DRAIN AND BACKFILL DETAILS	PLATE WD

CLASSIFICATION OF SOILS

The soil descriptions on the boring profiles are in accordance with the criteria outlined below. The principal constituents are written in capital letters with other constituents preceded by descriptive terminology used to denote the percentages by weight of each component. The soil descriptions are based upon visual examinations except where laboratory gradation and Atterberg limits tests are available.

Descriptive Terms Denoting Component Proportions

Descriptive Terms	Range of Proportion
Trace	1 - 10%
Little	10 - 20%
Some	20 - 35%
And	35 - 50%

Component Definitions by Gradation

Soil Component		Sieve Limits Upper	Sieve Limits Lower
*GRAVEL/ ROCK FRAGS	Coarse	3 in.	1 in.
	Medium	1 in.	3/8 in.
	Fine	3/8 in.	No. 10 (2.0mm)
SAND	Coarse	No. 10 (2.0mm)	No. 30 (0.590mm)
	Medium	No. 30 (0.590mm)	No. 60 (0.250mm)
	Fine	No. 60 (0.250mm)	No. 200(0.074mm)
SILT, CLAY and COLLOIDS: (fines defined by degree of plasticity)		No. 200 (0.074mm)	

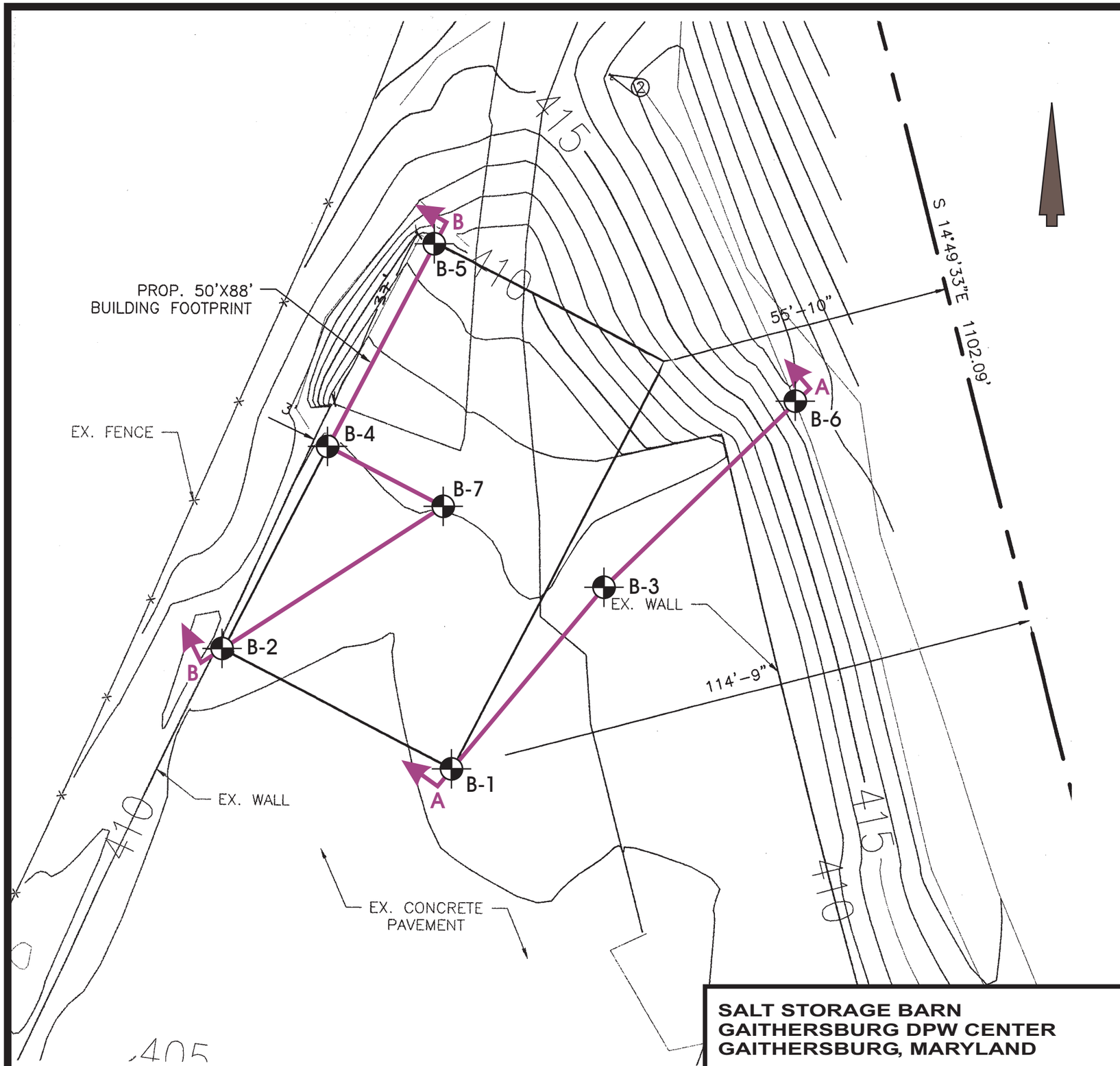
*This component is classified as “GRAVEL” in sedimentary soils and as “ROCK FRAGS” in residual soils.

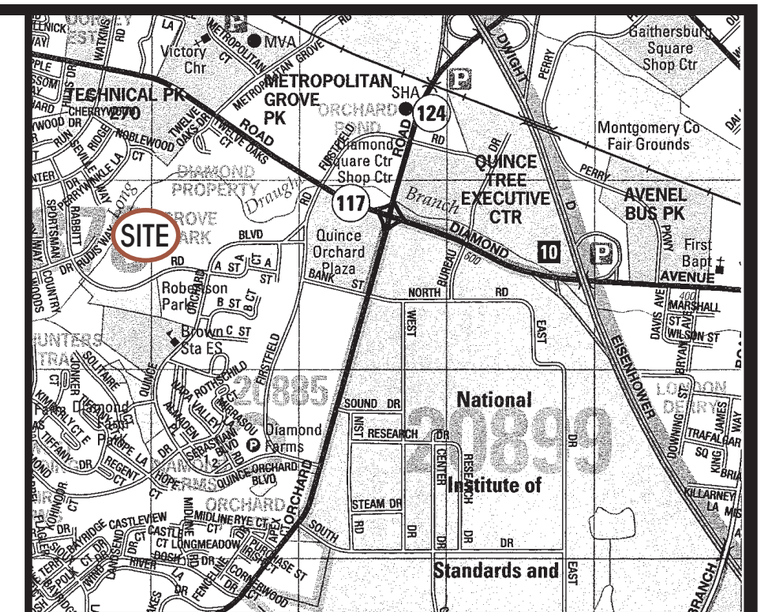
Component Definitions by Degree of Plasticity

Descriptive Term	Degree of Plasticity	Plasticity Index Range
SILT	None	Non-plastic (NP)
Clayey SILT	Slight	1 - 5
SILT & CLAY	Low	5 - 10
CLAY & SILT	Medium	10 - 20
Silty CLAY	High	20 - 40
CLAY	Very High	Over 40

Gradation Terms of Granular Components

Gradation Designation	Symbol	Defining Proportions
coarse to fine	cf	All fractions greater than 10% of the component
coarse to medium	cm	Less than 10% fine
medium to fine	mf	Less than 10% coarse
coarse	c	Less than 10% medium and fine
medium	m	Less than 10% coarse and fine
fine	f	Less than 10% coarse and medium





VICINITY MAP

NOTES:

1. Borings B-1 through B-7 performed at the direction of the Geotechnical Engineer during April 2015.

2. Boring locations selected by KCI Technologies and staked in the field by the Geotechnical Engineer. Locations and elevations shown are approximate.

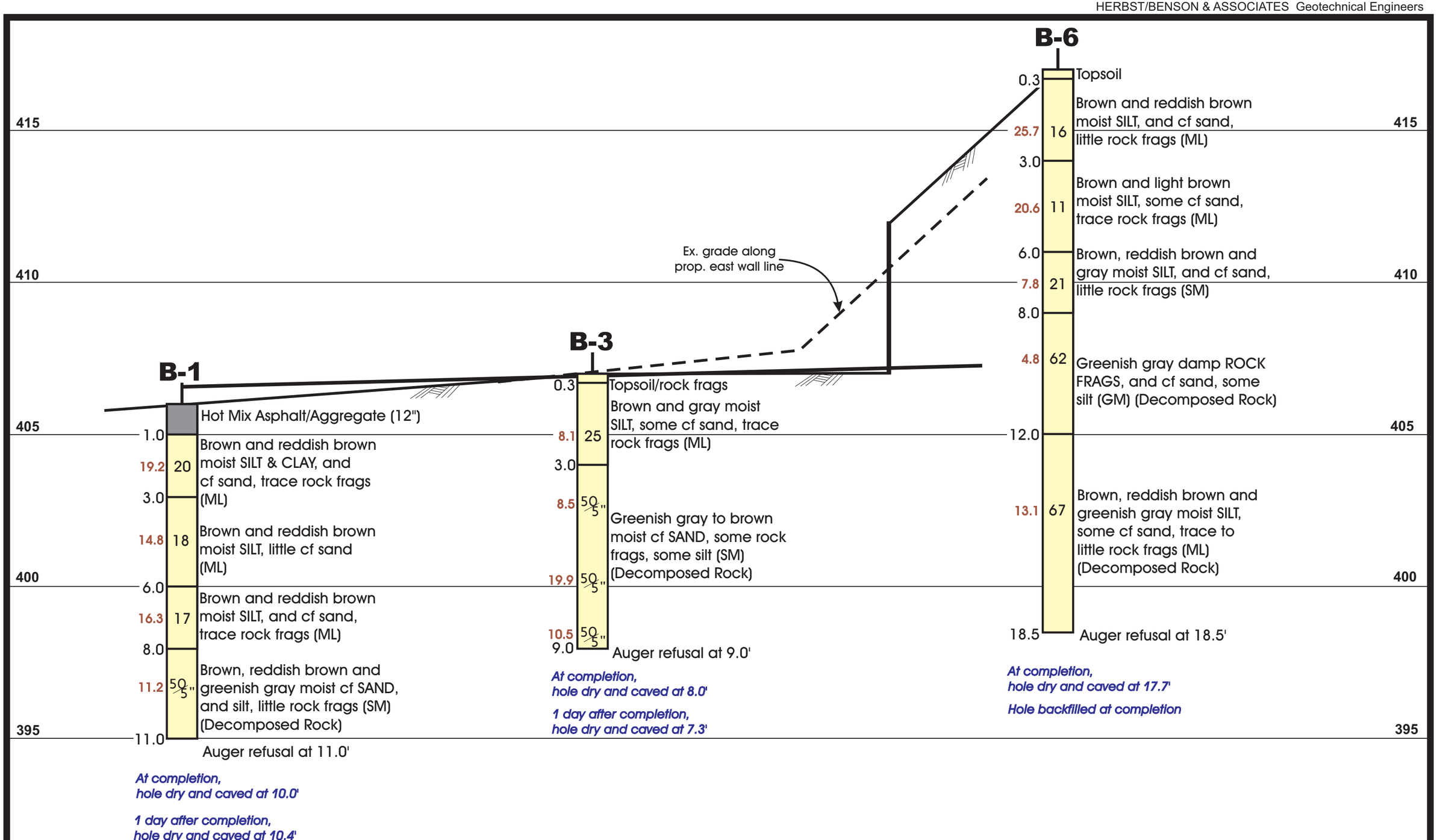
3. Boring Location Plan and elevations taken from a plan entitled, SITE PLAN, CITY OF GAITHERSBURG SALT STORAGE, by KCI Technologies, dated 03/19/2015.

4. Figures in columns on boring profiles represent the standard penetration resistance (N) in blows per foot, or as noted, as determined by the ASTM D1586 procedure using a 2" O.D. - 1 3/8" I.D. sampler.

5. Stratification on boring profiles estimated from driller's observations and recovered soil samples. Actual strata changes may vary from those shown and may be either abrupt or gradual.

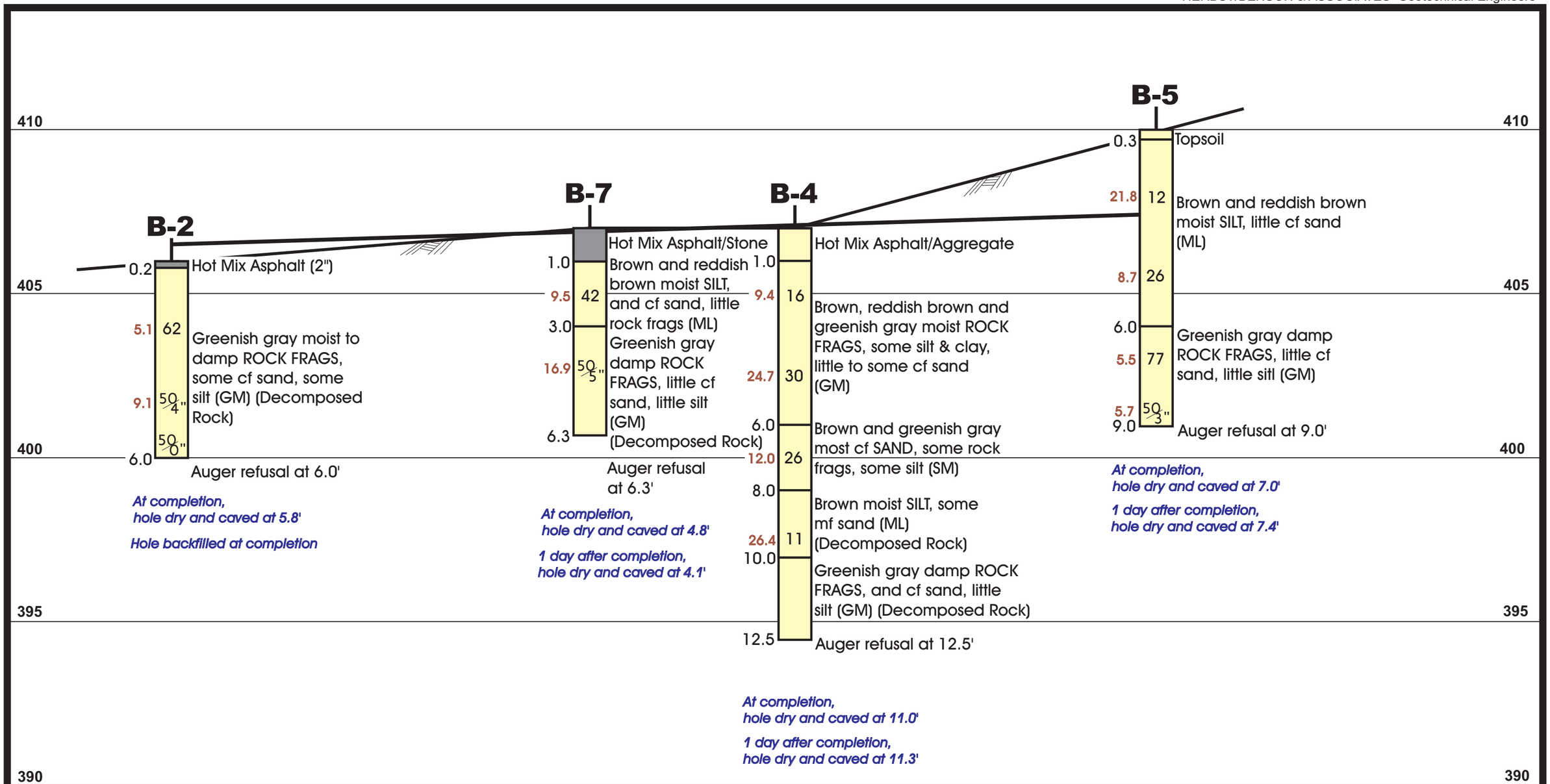
SALT STORAGE BARN
GAITHERSBURG DPW CENTER
GAITHERSBURG, MARYLAND

BORING LOCATION PLAN		PLATE
HORIZ SCALE (FEET) 0 — 20	15025MD	1
	APRIL, 2015	



SECTION A - A

SALT STORAGE BARN GAITHERSBURG DPW CENTER GAITHERSBURG, MARYLAND	15025MD APRIL, 2015	BORING PROFILES HORIZ SCALE (FEET) 0 — 10 VERT SCALE (FEET) 0 — 3	PLATE 2



SECTION A - A

SALT STORAGE BARN GAITHERSBURG DPW CENTER GAITHERSBURG, MARYLAND	15025MD APRIL, 2015	BORING PROFILES HORIZ SCALE (FEET) 0 — 12 VERT SCALE (FEET) 0 — 3	PLATE 3

REQUEST FOR BIDS

NO. 2016-024

HI-ARCH GAMBREL SALT STORAGE BUILDING

ATTACHMENT D

Specifications

PERFORMANCE SPECIFICATIONS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Provide design and construction for a permanent pre-engineered building, weathertight (exclusive of the entranceway), and suitable for the bulk storage of salt. The building design shall meet or exceed the performance and dimensional criteria and other requirements of this specification.

B. The Owner reserves the right to consider bids for structures varying in minor respects from any specific requirements specified herein, but judged to meet the intent of this specification.

C. Definitions:

1. The term "Owner" means the City of Gaithersburg, Maryland.

2. The term "Contractor" means the lowest responsible bidder awarded the Contract for the work.

3. The term "floor" means the exposed portion of the asphalt concrete surface of the building site that lies within the inner building perimeter.

4. The term "salt" means sodium chloride used to melt snow and ice from roadway surfaces.

D. Related Work Specified in Part 2:

1. Plot Plan
2. Earthwork and Foundation Excavation
3. Building Floor
4. Final Grading and Restoration
5. Electrical Work

1.2 QUALITY ASSURANCE

A. Contractor's Qualifications:

1. To be eligible for award of Bid, Contractor shall have at least five (5) years' successful experience in the construction of the type of structure proposed in his Bid, and shall provide references on the form attached for this purpose with his Bid.

B. Materials:

1. Contractor shall provide materials that have a proven track record, and shall be responsible for all products, components, accessories, and methods used in constructing the building.

2. The minimum printed code standard requirements of the following organizations for material quality, fabrication, and installation procedures shall be met or exceeded, for applicable methods employed in the building design:

American Institute of Steel Construction	(AISC)
American Concrete Institute	(ACI)
American Institute of Timber Construction	(AITC)
American Iron and Steel Institute	(AISI)
American Plywood Association	(APA)
American Softwood Lumber Standard:	U. S. Dept. of Commerce PS-20

1.3 SUBMITTALS

A. Furnish the following information as proof of conformity to design and performance criteria requirements of this specification. The information (for both submittal phases, below) shall be stamped with the registration seal of an Architect or a Professional Engineer, licensed in this state and bearing the authorized facsimile of the signature of such Architect or Professional Engineer.

B. With bid proposal at the time of bidding, furnish a complete set of properly certified design drawings, indicating in detail all features of the proposed building. In the case of prefabricated buildings and proprietary design, submit advertising literature depicting the proposed building.

C. Post-bidding submittal by the apparent successful bidder will furnish the following information within two (2) weeks of notification by Owner:

1. Complete design calculations for building and foundation work.

2. For prefabricated structures: original working drawings, or copies of complete fabrication and erection drawings, material lists, and detailed erection instructions.

3. Foundation work: detailed drawings for preparation and construction.

1.4 ROOFING GUARANTEE

A. The Contractor shall guarantee the installation of the roof for a period of two (2) years after the building is turned over to the Owner.

1.5 CODE COMPLIANCE

A. The structure shall be built in conformance with all applicable codes. The Owner is responsible to submit the design for any required review prior to commencement of construction; however, the Contractor is responsible to execute the construction of the building so as to achieve compliance.

PART 2 - RELATED WORK

2.1 SUMMARY

A. This section identifies which portions of the following related work are to be done by the Owner, and which by the Contractor.

2.2 PLOT PLAN

A. The Owner will furnish to all bidders a plot plan showing the proposed location of the salt storage building, including distances from lot lines and encumbrances on the site such as existing buildings. All bidders are invited to inspect the site at 800 Rabbitt Road, Gaithersburg, MD 20878, during the pre-bid meeting.

2.3 EARTHWORK AND FOUNDATION EXCAVATION

A. The Contractor shall prepare the site for the building so that the grade within the building area is level to within plus or minus 2", and so that the grade of the surrounding area slopes away from the building in all directions sufficiently to insure proper drainage. Initial site work shall be completed within fifteen (15) working days after award of the Contract. The Contractor shall excavate and backfill to original grade for the foundation footings.

2.4 BUILDING FLOOR

A. The Contractor shall install an asphalt concrete floor, and shall coordinate this work so as not to delay the Project.

2.5 FINAL GRADING AND RESTORATION

A. The Contractor shall provide for all final grading and site restoration as per the attached Site Plan Documents.

2.6 ELECTRICAL AND POWER SUPPLY

A. As a means of completely supplying needed electricity to the Salt Barn Facility, the Contractor shall design and install a power supply network from two optional source of power; the closest transformer to the facility or the main power supply panel located on the second level of City of Gaithersburg Public Works Facility.

B. The electrical power supply network shall include all needed components (Sub-panel, disconnects, conduits, wires, etc.). The power supply network is also inclusive of all needed wiring and lighting within the Salt barn. All conduits shall be within a building or buried underground. If conduits are to be buried underground, the City shall be responsible for trenching and ground refill/repair. The power supply network shall be design per all applicable codes to meet the power need for the Salt Barn plus thirty percent (40%) for future growth.

PART 3 - DESIGN CRITERIA & PRODUCTS

3.1 SALT STORAGE BUILDING DESIGN AND PERFORMANCE CRITERIA

A. Dimensional Requirements for Rectangular Building:

1. Width: 50'
2. Length: 88'
3. Vertical Side Wall Height: 12' above finished floor
4. Overall Height: Not to exceed 40' above finished grade

B. Loading Method:

The building shall be filled without the use of conveyors, grain augers, or similar loading equipment. For this reason, it shall be designed to permit delivery of materials directly into the building, including by such vehicles as tractor-trailer trucks.

C. Storage Method:

The building shall, when filled to capacity, enclose the material stored entirely within the structure, exclusive of the entranceway. Pile sides shall be enclosed by the wall described in 3.01.G. The remaining uncontained pile sides, above the contained portion, shall be assumed to be sloped at a 32-degree angle of repose.

D. Building Structural Requirements:

Provide a rigid, self-supporting structure comprised of standard building framing components, or an approved building system of integrated structural components, complete with necessary foundations which are designed to securely and permanently support roof and wall construction. Building shall meet or exceed the following minimum structural design criteria:

a. Ground Snow Load: 30 pounds per square foot
b. Lateral Wind Load: 105 mph, Exposure C
c. Soil Bearing Pressure: 3,000 pounds per square foot

E. Building Products:

The following minimum required standards shall be met for the products listed:

1. Concrete:

   Concrete shall have a minimum compressive strength of 4,000 psi at 28 days, and be supplied by Maryland State Highway Administration approved concrete plant. Reinforcement bars in any concrete used above grade shall be epoxy coated.

2. Preservative Treated Wood:

   a. General:

      - Treat lumber as herein specified.
      - Comply with applicable American Wood Preserver's Association (AWPA) requirements.
      - All timbers to be dressed timbers.

- All lumber to be kiln dried to a maximum moisture content of 19% before treatment.

b. All above-ground lumber exposed to weather, or directly in contact with salt, shall be treated with water-borne preservatives in accordance with AWPA Standard U1 to the requirements of Use Category UC4A (CCA 0.40).

c. Load-bearing wood members placed in the ground, or encased in concrete, are to be treated with water-borne preservatives in accordance with AWPA Standard U1 to the requirements of Use Category UC4B (CCA 0.60).

d. Any wood components with a nominal thickness of 2" or less shall have a moisture content not to exceed 19% when installed.

3. Metal Plates and Fasteners:

a. Metal plates and fasteners used in the building (truss bearing plates, shear plates, truss gusset plates, joist hangers, nails, bolts, nuts, washers, screws, etc.) which are in direct contact with salt, or which are exposed to an atmosphere containing salt, shall be designed to resist corrosion due to such contact or exposure.

b. Items listed below (if used in the building) shall meet the following specific requirements:

- Truss bearing plates, bolts, and washers: to be stainless steel.
- Truss gusset plates: to be galvanized steel, epoxy coated.
- Joist hangers: to be triple-zinc coated.
- Nails applied to CCA or CDX lumber shall be ring-shank, double hot dipped, galvanized coated steel.

F. Interior Space:

1. Provide unobstructed interior space to allow charging and re-charging of the pile storage area to full capacity, and to allow unimpeded loading of truck-spreader vehicles with front-end loading equipment. Provide the entire interior floor area free of columns or roof supports of any type.

2. Minimum Center Clearance: Provide a 30' clear height at the center of the building width and extending the length of the building. This clearance shall be maintained in an area at least 16 ft. wide, centered on the entranceway and running the length of the structure.

G. Concrete Wall Construction:

1. Design the barrier wall to resist the weight (i. e., forces) of salt and sand assuming the following loading conditions:

a. Salt and sand will be stored to a contained height of twelve feet (12') against the barrier wall.

b. The salt and sand will further slope upwards and away from the wall toward a peak or ridge in the center of the building at a 32 degree angle of repose.

c. The resulting horizontal force created against the wall will be 0.719 times the weight of the sand and salt.

2. Wall shall be designed to resist salt and sand load of 100 pcf, to resist a horizontal impact load of 250 lbs., and to resist structural damage from abrasion by salt loading equipment.

3. Materials:

a. Wall shall be 12' high above grade as noted above.

b. Reinforcement bars in any concrete used above grade shall be epoxy coated.

c. Any concrete extending above grade shall be installed employing forms with surface treatment and accessories as required to achieve properly formed and cured, undistorted results with minimal number of joints and a clean surface finish.

d. A protective coating shall be applied to the interior surfaces of the concrete wall consisting of a 40% silane solution such as alkylalkoxysilane, alkyltrialkoxy silane, or equal.

4. Execution: Weather Protection:

a. Provide cold weather and/or hot weather protection as recommended in ACI-305 and ACI-306.

b. Unless adequately protected, concrete shall not be placed during rain, sleet, or snow. Protect concrete from rain water, maintain cement: water ratio, and protect concrete surface.

c. All concrete shall be adequately protected after pouring to prevent damage from freezing, by the use of suitable covers and adequate heating equipment. Frozen and damaged concrete must be removed and replaced at the Contractor's expense. Do not place concrete on frozen earth. Pouring of concrete when temperatures are below 40 degrees shall not be permitted.

H. Upper Wall Construction:

Provide wall system, above the level of the concrete wall, of wood components providing a durable weather-resistant barrier, which may be maintained easily by Owner with non-proprietary products readily available for such purpose.

Apply paint or stain of Owner's choice, first verifying compatibility with siding material.

I. Doors:

1. Provide one unobstructed rectangular entrance opening, nominal dimensions to be 30' high by 20' wide.

   a. In this opening, provide an upward acting sectional door (overhead) designed for 20 psf minimum wind load. Supply and install all wood head and jamb framing and blocking as called for by door manufacturer.

   b. A chain hoist to provide capability for manual operation of door shall be included.

   c. Electric door operator shall be jack shaft, side mounted, model as recommended by door manufacturer for door size and lift condition, with standard hardware operable both from inside and outside of building.

2. In the crib wall adjacent to the main entranceway, furnish and install one 3'-0" x 6'-8" exterior grade fiberglass swing-out pass door with jambs and hardware, color as selected by Owner.

J. Pipe Bollards:

Furnish and install two pipe bollards to be used as door jamb guard posts, minimum six inches (6") in diameter and seven feet (7') in length, consisting of standard weight galvanized steel structural pipe, filled with concrete. Form concrete crown at top of bollard. These shall be embedded in concrete footings, and painted federal safety yellow using rust-inhibitive paint. Paint shall be applied to entire length of pipe, including the joint between pipe and footing.

K. Roofing System (General):

Provide materials and surface finishes conforming to the guarantee specified in Section 1.4, requiring minimum maintenance and conforming to, or exceeding, the Underwriters' Laboratories, Inc. Class C rating requirements (labels are not required). Unprotected aluminum or bare steel surfaces are not acceptable.

1. Type: prefabricated or site-built, complete with all necessary accessories, fastening devices, trim, and flashings. A skylight system shall be included as an integral part of the roof structure.

2. Drainage: positive slope; no standing water.

3. Strength: comply with structural criteria specified in Section 3.1.D.

4. Wind Resistance: 60 psf (uplift) for adhesive applied products, UL Standard 997 for shingle type products.

5. Compatibility: all materials to be physically and chemically compatible with each other and with adjacent building components.

6. Products:

Base Bid – Metal Roof

a. Metal roofing shall consist of 29 gauge galvanized coated steel panels, with color matched fasteners, color to be selected by Owner.

b. Roofing base shall be 30 lb. Titanium underlayment.

c. Sheathing shall be APA rated, 5/8" thick nominal, CDX plywood roof sheathing. In no case shall metal roofing be applied directly to trusses.

Alternate #1 – Shingle Roof

a. Shingles shall be fiberglass asphalt architectural shingles, or approved equal, carrying a manufacturer's warranty of 30 years, color to be selected by Owner.

b. Roofing felt base underlayment shall be 15 lbs., asphalt coated.

c. Sheathing shall be APA rated, 5/8" thick nominal CDX plywood roof sheathing.

L. Ventilation:

Provide suitable openings located at or near the highest point of the roof to provide a minimum ratio of 1 sq. in. of free air area for each 55 sq. ft. of building floor area.

3.2 <u>LEAN-TO DESIGN AND PERFORMANCE CRITERIA</u>

A. General Structural Criteria:

1. Provide an adjunct wood framed structure, hereinafter referred to as the "lean-to", comprised of standard building framing components, or an approved building system of integrated structural components, complete with necessary foundations designed to support the superstructure.

2. Building and foundations shall meet or exceed the structural design criteria specified in Section 3.1.D and E.

3. If the roof of the main structure is designed to allow movement; the roof structure of the lean-to shall be designed so as not to interfere with such movement. Roofing materials shall be as called for in Section 3.1.K and shall be protected by the same guarantee.

B. Location:

The lean-to shall be located on the right side of the Salt Storage Structure as viewed when facing the entranceway, and shall be constructed as described below.

C. Dimensions:

Nominal dimensions of the lean-to shall be 16' deep by 68' long, with column spacing 12'-0" on center, and minimum clearances of 14' from finished floor to the underside of the trusses, and 12.5' to the header at the outer edge.

D. Components:

Exterior materials and finishes such as roofing, siding, paint or stain, etc., shall be as similar as possible to, and in all cases functionally and aesthetically compatible with materials used for the main salt storage structure.

3.3 INSTALLATION AND ERECTION

A. Provide all required footings, foundations, and/or other required substructures or supports at the required elevations on properly prepared subgrade, as required for the erection of the complete storage building.

B. Foundations shall be of size and depth required to resist frost action.

C. Bid prices shall include the cost of foundations appropriately designed to support the proposed structure.

D. Provide the salt storage building and required appurtenances, erected on abovementioned foundations, conforming to the performance requirements of these specifications complete and prepared for the storage of salt.

E. Add Option Line for bulk Road Salt / PER TON, delivered and loaded into building.

1. Road Salt must conform to requirements of the Maryland Department of Transportation's State Highway Administration specifications.

2. All bulk Road Salt will be uniformly treated with anti-caking compound.

3. All bulk Road Salt will be protected in transit by waterproof covering.

4. Road Salt will be free flowing and in usable condition upon arrival at its destination.

~ END OF PERFORMANCE SPECIFICATIONS ~

SECTION 16521 – EXTERIOR LIGHTING AND VENTILATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Provide Exterior luminaires necessary to provided site lighting luminance levels of 5 foot candles at a point 20' outside the entrance to the salt shed and under the exterior shed roof on the east side of the salt shed. Exterior luminaires shall be wall mounted LED fixtures on building exterior, pole mounted LED fixtures for site lighting, and pendant mounted LED fixtures beneath exterior shed roof. Provide photocell control for lighting fixtures with manual override switch.

2. Provide Interior luminaries necessary to provide luminance levels of 15 foot candles minimum within the salt shed. Interior luminaires shall be pendant mounted LED high bay fixtures suitable for use in corrosive environments. Provide wall mounted switch for control of lighting fixtures.

3. Contractor shall obtain an Electrical Permit to perform this work

4. Provide all luminaires, lighting brackets, concrete pole bases, lighting controls, conduit, wire and accessories for a complete and operational lighting package, including permitting, electrical plans, photometric plan signed by a Maryland Professional Engineer and all other items for a complete installation.

5. Ventilation of the space shall be provided on both ends of the gable end of the salt shed to remove excess heat in the summer and fumes from equipment when working in the salt shed during the winter with two 1600 CFM ventilator fans, complete in place, one with a thermostat for summer operation and the other with a manual switch located at ground level for winter operation during salt loading.

1.3 DEFINITIONS

A. CRI: Color-rendering index.

B. Luminaire: Complete lighting fixture, including ballast housing if provided.

1.4 STRUCTURAL ANALYSIS CRITERIA FOR MOUNTING SELECTION

A. Dead Load: Weight of luminaire 500 lbf, and its horizontal and vertical supports, lowering devices, and supporting structure, applied as stated in AASHTO LTS-4.

B. Live Load: Single load of 500 lbf, distributed as stated in AASHTO LTS-4.

C. Ice Load: Load of 3 lbf/sq. ft., applied as stated in AASHTO LTS-4.

D. Wind Load: Pressure of wind on mounting bracket and luminaire, calculated and applied as stated in AASHTO LTS-4.

1. Wind speed for calculating wind load for brackets 50 feet or less in height is 80 mph.

1.5 SUBMITTALS

A. Product Data: For each luminaire, bracket, and support component, arranged in order of lighting unit designation. Include data on features, accessories, finishes, and the following:

1. Physical description of luminaire, including materials, dimensions, effective projected area, and verification of indicated parameters.

2. Details of attaching luminaires and accessories.

3. Details of installation and construction.

4. Luminaire materials.

5. Photometric data based on laboratory tests of each luminaire type, complete with indicated lamps, ballasts, and accessories.

a. For indicated luminaires, photometric data shall be certified by a qualified independent testing agency. Photometric data for remaining luminaires shall be certified by manufacturer.

b. Photometric data shall be certified by manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products.

6. Photoelectric relays.

7. Ballasts, including energy-efficiency data.

8. Lamps, including life, output, and energy-efficiency data.

9. Materials, dimensions, and finishes of poles.

10. Means of attaching luminaires to supports, and indication that attachment is suitable for components involved.

11. Anchor bolts for brackets.

12. Electric Panel

B. Shop Drawings:

1. Anchor-bolt templates keyed to specific poles and certified by manufacturer.

2. Design calculations, certified by a qualified professional engineer, indicating strength brackets.

3. Wiring Diagrams: Power and control wiring.

4. Lighting Calculations: Point-by-point calculations for fixtures shown on the Site Plan and noted on the Lighting Fixture Schedule. Calculation grid shall be 10'-0" on center, horizontal.

C. Samples for Verification: For products designated for sample submission in Exterior Lighting Device Schedule. Each sample shall include lamps and ballasts.

D. Support Component Certificates: Signed by manufacturers of poles, certifying that products are designed for indicated load requirements in AASHTO LTS-4 and that load imposed by luminaire has been included in design.

E. Qualification Data: For agencies providing photometric data for lighting fixtures.

F. Field quality-control test reports.

G. Operation and Maintenance Data: For luminaires to include in emergency, operation, and maintenance manuals.

H. Warranty: Special warranty specified in this Section.

1.6 QUALITY ASSURANCE

A. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by manufacturers' laboratories that are accredited under the National Volunteer Laboratory Accreditation Program for Energy Efficient Lighting Products.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Comply with IEEE C2, "National Electrical Safety Code."

D. Comply with NFPA 70, National Electrical Code.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Package fixtures for shipping according to ASTM B 660.

B. Store poles on decay-resistant-treated skids at least 12 inches (300 mm) above grade and vegetation. Support components to prevent distortion and arrange to provide free air circulation.

C. Retain factory-applied wrappings on fixtures until right before installation. For fixtures with nonmetallic finishes, handle with web fabric straps.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace products that fail in materials or workmanship; that corrode; or that fade, stain, perforate, erode, or chalk due to effects of weather or solar radiation within specified warranty period. Manufacturer may exclude lightning damage, hail damage, vandalism, abuse, or unauthorized repairs or alterations from special warranty coverage.

1. Warranty Period for Luminaires: Five years from date of Substantial Completion.

2. Warranty Period for Metal Corrosion: Five years from date of Substantial Completion.

3. Warranty Period for Color Retention: Five years from date of Substantial Completion.

4. Warranty Period for Lamps: Replace lamps and fuses that fail within 24 months from date of Substantial Completion; furnish replacement lamps and fuses that fail within the second 24 months from date of Substantial Completion.

5. Warranty Period for fixtures and wiring: Repair or replace lighting fixtures and standards that fail in finish, materials, and workmanship within manufacturer's standard warranty period, but not less than five years from date of Substantial Completion.

1.9 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Lamps: 1 for every 10 of each type and rating installed. Furnish at least one of each type.

2. Glass and Plastic Lenses, Covers, and Other Optical Parts: 1 for every 10 of each type and rating installed. Furnish at least one of each type.

3. Ballasts: 1 for every 10 of each type and rating installed. Furnish at least one of each type.

4. Globes and Guards: 1 for every 2 of each type and rating installed. Furnish at least one of each type.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

B. In Exterior Lighting Device Schedule where titles below are column or row headings that introduce lists, the following requirements apply to product selection:

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, and are limited to, manufacturers specified.

2. Basis of Design Product: The design of each item of exterior luminaire and its support is based on the product named. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified.

2.2 LUMINAIRES, GENERAL REQUIREMENTS

A. Luminaires shall comply with UL 1598 and be listed and labeled for installation in wet locations by an NRTL acceptable to authorities having jurisdiction.

B. Comply with IESNA RP-8 for parameters of lateral light distribution patterns indicated for luminaires.

C. Metal Parts: Free of burrs and sharp corners and edges.

D. Sheet Metal Components: Corrosion-resistant aluminum, unless otherwise indicated. Form and support to prevent warping and sagging.

E. Housings: Rigidly formed, weather- and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.

F. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position. Doors shall be removable for cleaning or replacing lenses. Designed to disconnect ballast when door opens.

G. Exposed Hardware Material: Stainless steel.

H. Plastic Parts: High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.

I. Light Shields: Metal baffles, factory installed and field adjustable, arranged to block light distribution to indicated portion of normally illuminated area or field.

J. Reflecting surfaces shall have minimum reflectance as follows, unless otherwise indicated:

1. White Surfaces: 85 percent.

2. Specular Surfaces: 83 percent.

3. Diffusing Specular Surfaces: 75 percent.

K. Lenses and Refractors Gaskets: Use heat- and aging-resistant resilient gaskets to seal and cushion lenses and refractors in luminaire doors.

L. Luminaire Finish: Manufacturer's standard paint applied to factory-assembled and -tested luminaire before shipping. Where indicated, match finish process and color of pole or support materials.

M. Factory-Applied Finish for Steel Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning," to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning," or SSPC-SP 8, "Pickling."

2. Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.

a. Color: As selected from manufacturer's standard catalog of colors.

N. Factory-Applied Finish for Aluminum Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

1. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

2. Class I, Color Anodic Finish: AA-M32C22A42/A44 (Mechanical Finish: medium satin; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker) complying with AAMA 611.

2.3 <u>LED LUMINAIRE REQUIREMENTS</u>

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Rated lamp life of 50,000 hours.

2.4 <u>POLES AND SUPPORT COMPONENTS, GENERAL REQUIREMENTS</u>

A. Structural Characteristics: Comply with AASHTO LTS-4.

1. Wind-Load Strength of Mountings: Adequate at indicated heights above grade without failure, permanent deflection, or whipping in steady winds of speed indicated in Part 1 "Structural Analysis Criteria for Pole Selection" Article, with a gust factor of 1.3.

2. Strength Analysis: For each mounting, multiply the actual equivalent projected area of luminaires and brackets by a factor of 1.1 to obtain the equivalent projected area to be used in pole selection strength analysis.

B. Luminaire Attachment Provisions: Comply with luminaire manufacturers' mounting requirements. Use stainless-steel fasteners and mounting bolts, unless otherwise indicated.

C. Mountings, Fasteners, and Appurtenances: Corrosion-resistant items compatible with support components.

1. Materials: Shall not cause galvanic action at contact points.

2. Anchor Bolts, Leveling Nuts, Bolt Caps, and Washers: Hot-dip galvanized after fabrication, unless stainless-steel items are indicated.

3. Anchor-Bolt Template: Plywood or steel.

2.5 Mounting of Luminaries

A. Steel Mast Arms: Single-arm type, continuously welded to attachment plate. Material and finish same as mast.

B. Brackets for Luminaires: Detachable, cantilever, without underbrace.

1. Adapter fitting welded to pole and bracket, then bolted together with stainless-steel bolts.

2. Cross Section: Tapered oval, with straight tubular end section to accommodate luminaire.

3. Match pole material and finish.

C. Barn Top Tenons: Fabricated to support luminaire or luminaires and brackets indicated, and securely fastened to barn.

D. Grounding and Bonding Lugs: Welded 1/2-inch threaded lug, complying with requirements in Section "Grounding," listed for attaching grounding and bonding conductors of type and size listed in that Section, and accessible through handhole.

E. Cable Support Grip: Wire-mesh type with rotating attachment eye, sized for diameter of cable and rated for a minimum load equal to weight of supported cable times a 5.0 safety factor.

F. Platform for Lamp and Ballast Servicing: Factory fabricated of steel with finish matching that of mounting bracket.

G. Prime-Coat Finish: Manufacturer's standard prime-coat finish ready for field painting.

H. Galvanized Finish: After fabrication, hot-dip galvanize complying with ASTM A 123/A 123M.

I. Factory-Painted Finish: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning," to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning," or SSPC-SP 8, "Pickling."

2. Interior Surfaces of Mast: One coat of bituminous paint, or otherwise treat for equal corrosion protection.

3. Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.

a. Color: As selected by Owner from manufacturer's full range.

PART 3 - EXECUTION

3.1 GENERAL:

A. Comply with NECA/IESNA 501-2006 “Standard for Installing Exterior Lighting Systems”.

3.2 LUMINAIRE INSTALLATION

A. Install lamps in each luminaire.

B. Fasten luminaire to indicated structural supports.

1. Use fastening methods and materials selected to resist seismic forces defined for the application and approved by manufacturer.

C. Adjust luminaires that require field adjustment or aiming. Include adjustment of photoelectric device to prevent false operation of relay by artificial light sources.

3.3 LIGHT AND MAST INSTALLATION

A. Align lights and mast for optimum directional alignment of luminaires and their mounting provisions on the salt shed.

B. Clearances: Maintain the following minimum horizontal distances of poles from surface and underground features, unless otherwise indicated on Drawings:

1. Ground: 18 feet minimum in the salt storage shed.

3.4 CORROSION PREVENTION

A. Aluminum: Do not use in contact with earth or concrete. When in direct contact with a dissimilar metal, protect aluminum by insulating fittings or treatment.

B. Steel Conduits: Comply with Section 260259 "Raceways and Boxes." In concrete foundations, wrap conduit with 0.010-inch- thick, pipe-wrapping plastic tape applied with a 50 percent overlap.

3.5 GROUNDING

A. Ground metal poles and support structures according to Section 260526 "Grounding and Bonding for Electrical Systems."

1. Install grounding electrode for each pole, unless otherwise indicated.

2. Install grounding conductor pigtail in the base for connecting luminaire to grounding system.

B. Ground nonmetallic poles and support structures according to Section 260526 "Grounding and Bonding for Electrical Systems."

1. Install grounding electrode per electrical code.

2. Install grounding conductor and conductor protector.

3. Ground metallic components of pole accessories and foundations.

3.6 FIELD QUALITY CONTROL

A. Inspect each installed fixture for damage. Replace damaged fixtures and components.

B. Illumination Observations: Verify normal operation of lighting units after installing luminaires and energizing circuits with normal power source.

1. Verify operation of photoelectric controls.

C. Illumination Tests:

1. Measure light intensities at night. Use photometers with calibration referenced to NIST standards. Comply with the following IESNA testing guide(s):

a. IESNA LM-64, "Photometric Measurements of Parking Areas."

b. IESNA LM-72, "Directional Positioning of Photometric Data."

c. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

3.7 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain luminaire lowering devices. Refer to Division 01 Section that includes Demonstration and Training.

~ END OF SECTION 16521 ~

SECTION 021000 – FIELD ENGINEERING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Requirements of the General Provisions apply to all work under this section.

B. Throughout the specifications, types of materials may be specified by manufacturer's name and catalogue number in order to establish standards of quality and performance and not for the purpose of limiting competition. Alternate methods and/or materials may be submitted to the Owner for consideration. Those judged to be equal to that specified will receive written approval.

C. Refer to GeoTechnical Report prepared by Herbst/Benson and Associates, dated April 30, 2015 (Rev# 5/21/15).

1.2 SUMMARY

A. Work included: Provided at the Contractor's expense, such field engineering services as are required for proper completion of the Work including, but not necessarily limited to:

1. The Contractor shall be responsible for all stakeouts and elevation checks required for construction. The Contractor shall verify adequacy of benchmarks before starting construction.

2. Before the start of any building construction, the Contractor shall locate and stake building corners, parking areas. If there are any discrepancies between the actual layout and the project site plan, they shall be brought to the attention of the Project Engineer and resolved before Work proceeds.

3. After the foundation/footers have been placed, the Contractor shall verify and record the elevation.

4. At the end of the project, the Contractor shall prepare an as-built survey showing the accurate horizontal and vertical locations of all building corners, paved areas, utilities, fencing and site walls in accordance with the requirements of City of Gaithersburg, etc. located within the project area.

1.3 RELATED WORK:

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections of these Specifications.

B. Additional requirements for field engineering also may be described in other Sections of these Specifications.

1.4 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.5 SUBMITTALS

A. Comply with pertinent provisions in specifications for Submittal procedures.

B. Upon request of the Owner, submit;

1. Data demonstrating qualifications of persons proposed to be engaged for field Engineering services.

2. Documentation verifying accuracy of field engineering work.

3. Certifications, signed by the Contractor's retained field engineer, certifying that elevations and locations of improvements are in conformance with requirements of the Contract Documents.

1.6 PROCEDURES

A. In addition to procedures directed by the Contractor for the proper performance of the Contractor's responsibilities:

1. Locate and protect control points before starting Work on the site.

2. Preserve permanent reference points during process of the Work.

3. Do not change or relocate reference points or items of the Work without specific approval from the Engineer.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

Not Applicable

~ END SECTION 021000 ~

SECTION 260526 – GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 STIPULATIONS

A. The specifications sections "General Conditions of Contract", "Special Conditions" and "Division 1 – General Requirements" form a part of this section by this reference thereto, and shall have the same force and effect as if printed herewith in full.

1.2 SUMMARY

A. Section includes grounding and bonding systems and equipment.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Field quality-control reports.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 467 for grounding and bonding materials and equipment.

2.2 CONDUCTORS

A. Insulated Conductors: Copper or tinned-copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

B. Bare Copper Conductors:

1. Solid Conductors: ASTM B 3.

2. Stranded Conductors: ASTM B 8.

3. Tinned Conductors: ASTM B 33.

4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch in diameter.

5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.

6. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.

7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.

2.3 CONNECTORS

A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.

B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy.

C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

2.4 GROUNDING ELECTRODES

A. Ground Rods: Copper-clad steel; 3/4 inch by 10 feet.

PART 3 - EXECUTION

3.1 APPLICATIONS

A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.

B. Underground Grounding Conductors: Install bare copper conductor, No. 2/0 AWG minimum.

1. Bury at least 24 inches below grade.

C. Conductor Terminations and Connections:

1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.

2. Underground Connections: Welded connectors except at test wells and as otherwise indicated.

3. Connections to Structural Steel: Welded connectors.

3.2 GROUNDING AT THE SERVICE

A. Equipment grounding conductors and grounding electrode conductors shall be connected to the ground bus. Install a main bonding jumper between the neutral and ground buses.

B. Provide connection to all available grounding electrodes in accordance with NPFA Article 250.

3.3 GROUNDING UNDERGROUND DISTRIBUTION SYSTEM COMPONENTS

A. Comply with IEEE C2 grounding requirements.

3.4 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with all feeders and branch circuits.

B. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:

1. Feeders and branch circuits.

2. Lighting circuits.

3. Receptacle circuits.

4. Single-phase motor and appliance branch circuits.

5. Three-phase motor and appliance branch circuits.

6. Flexible raceway runs.

C. Air-Duct Equipment Circuits: Install insulated equipment grounding conductor to duct-mounted electrical devices operating at 120 V and more, including air cleaners, heaters, dampers, humidifiers, and other duct electrical equipment. Bond conductor to each unit and to air duct and connected metallic piping.

D. Poles Supporting Outdoor Lighting Fixtures: Install grounding electrode and a separate insulated equipment grounding conductor in addition to grounding conductor installed with branch-circuit conductors.

E. Signal and Communication Equipment: In addition to grounding and bonding required by NFPA 70, provide a separate grounding system complying with requirements in TIA/ATIS J-STD-607-A.

1. For telephone, alarm, voice and data, and other communication equipment, provide No. 4 AWG minimum insulated grounding conductor in raceway from grounding electrode system to each service location, terminal cabinet, wiring closet and central equipment location.

3.5 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Ground Rods: Drive rods until tops are 2 inches below finished floor or final grade unless otherwise indicated.

1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating if any.

2. For grounding electrode system, install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes, and connect to the service grounding electrode conductor.

C. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.

1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.

2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.

3. Use exothermic-welded connectors for outdoor locations; if a disconnect-type connection is required, use a bolted clamp.

3.6 FIELD QUALITY CONTROL

A. Perform the following tests and inspections and prepare test reports:

1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.

2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.

3. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, and at ground test wells. Make tests at ground rods before any conductors are connected.

B. Report measured ground resistances that exceed the following values:

1. Power and Lighting Equipment or System with Capacity of 500 kVA and Less: 10 ohms.

C. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Professional promptly and include recommendations to reduce ground resistance.

~ END OF SECTION 260526 ~

SECTION 260529 – HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 STIPULATIONS

A. The specifications sections "General Conditions of Contract", "Special Conditions" and "Division 1 – General Requirements" form a part of this section by this reference thereto, and shall have the same force and effect as if printed herewith in full.

1.2 SUMMARY

A. Section includes:

1. Hangers and supports for electrical equipment and systems.

2. Construction requirements for concrete bases.

1.3 PERFORMANCE REQUIREMENTS

A. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.

B. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.

C. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.

1.4 ACTION SUBMITTALS

A. Product Data: For steel slotted support systems.

1.5 QUALITY CONTROL

A. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.

1. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.

2. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.

3. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.

4. Channel Dimensions: Selected for applicable load criteria.

B. Raceway Supports: As described in NECA 1 and NECA 101.

C. Conduit Support Devices: Steel and malleable-iron hangers, clamps, and associated fittings, designed for types and sizes of raceway to be supported.

D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors supported. Body shall be malleable iron.

E. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.

F. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:

1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.

2. Mechanical-Expansion Anchors: Insert-wedge-type, stainless steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.

3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.

4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.

5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.

6. Toggle Bolts: All-steel springhead type.

7. Hanger Rods: Threaded steel.

PART 3 - EXECUTION

3.1 APPLICATION

A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.

B. All conductors shall be installed in raceways.

C. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch in diameter.

D. Multiple Raceways: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.

1. Secure raceways to these supports with two-bolt conduit clamps.

E. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch and smaller raceways serving branch circuits and communication systems above suspended ceilings and for fastening raceways to trapeze supports.

3.2 SUPPORT INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.

B. Raceway Support Methods: In addition to methods described in NECA 1. EMT, IMC, and RMC may be supported by openings through structure members, as permitted in NFPA 70.

C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.

D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:

1. To Wood: Fasten with lag screws or through bolts.

2. To New Concrete: Bolt to concrete inserts.

3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.

4. To Existing Concrete: Expansion anchor fasteners.

5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches thick.

6. To Steel: Beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69 .

7. To Light Steel: Sheet metal screws.

8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate.

E. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

3.4 PAINTING

A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.

1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils.

B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

~ END OF SECTION 260529 ~

SECTION 311000 – SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.
5. Removing above- and below-grade site improvements.
6. Disconnecting, capping, or sealing site utilities.
7. Temporary erosion and sedimentation control.

1.2 PREINSTALLATION MEETINGS

A. Pre-installation Conference: Conduct conference at Project site.

1.3 MATERIAL OWNERSHIP

A. Except for materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.4 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed trafficways if required by Owner or authorities having jurisdiction.

B. Salvageable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where instructed by owner.

C. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.

D. Do not commence site clearing operations until temporary erosion- and sedimentation-control and plant-protection measures are in place.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 312000 "Earth Moving."

1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. Verify that trees, shrubs, and other vegetation to remain or to be relocated have been flagged and that protection zones have been identified and enclosed according to requirements in Section 015639 "Temporary Tree and Plant Protection."

C. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Provide temporary erosion- and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings and requirements of authorities having jurisdiction.

B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

C. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.

D. Remove erosion and sedimentation controls, and restore and stabilize areas disturbed during removal.

3.3 EXISTING UTILITIES

A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.

1. Arrange with utility companies to shut off indicated utilities.

B. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others, unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Project Engineer not less than two days in advance of proposed utility interruptions.

2. Do not proceed with utility interruptions without Project Engineer written permission.

3.4 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.

1. Grind down stumps and remove roots larger than 3 inches in diameter, obstructions, and debris to a depth of 18 inches below exposed subgrade.

2. Use only hand methods or air spade for grubbing within protection zones.

B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.

3.5 TOPSOIL STRIPPING

A. Remove sod and grass before stripping topsoil.

B. Strip all topsoil in a manner to prevent intermingling with underlying subsoil or other waste materials.

C. Stockpile topsoil away from edge of excavations without intermixing with subsoil or other materials. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.

3.6 SITE IMPROVEMENTS

A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.

3.7 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

B. Separate recyclable materials produced during site clearing from other non-recyclable materials. Store or stockpile without intermixing with other

materials, and transport them to recycling facilities. Do not interfere with other Project work.

~ END OF SECTION 311000 ~

SECTION 312000 – EARTH MOVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Excavating and filling for rough grading the Site.
2. Preparing subgrades for slabs-on-grade, walks, pavements, turf and grasses and plants.
3. Excavating and backfilling for buildings and structures.
4. Drainage course for concrete slabs-on-grade.
5. Subbase course for concrete walks and pavements.
6. Subbase course for asphalt paving.
7. Excavating and backfilling trenches for utilities and pits for buried utility structures.

B. Refer to GeoTechnical Report prepared by Herbst/Benson and Associates, dated April 30, 2015 (Rev# 5/21/15).

1.2 DEFINITIONS

A. Backfill: Soil material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.

F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Project Engineer. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.

2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Project Engineer. Unauthorized excavation, as well as remedial work directed by Project Engineer, shall be without additional compensation.

G. Fill: Soil materials used to raise existing grades.

H. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

I. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.

J. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.

K. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct preexcavation conference at Project site.

1.4 INFORMATIONAL SUBMITTALS

A. Material test reports.

1.5 FIELD CONDITIONS

A. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth-moving operations.

B. Do not commence earth-moving operations until plant-protection measures specified in Section 015639 "Temporary Tree and Plant Protection" are in place.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D 2487 or a combination of these groups; free of rock or

gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

1. Liquid Limit: Less than 40.

2. Plasticity Index: Less than 10.

C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487 or a combination of these groups.

1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940/D 2940M; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 294/D 2940M 0; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.

F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940/D 2940M; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940/D 2940M; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.

H. Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and zero to 5 percent passing a No. 8 sieve.

2.2 <u>ACCESSORIES</u>

A. Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility; colored to comply with local practice or requirements of authorities having jurisdiction.

B. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored to comply with local practice or requirements of authorities having jurisdiction.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations.

B. Protect and maintain erosion and sedimentation controls during earth-moving operations.

C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 EXCAVATION, GENERAL

A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

3.3 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.

2. Pile Foundations: Stop excavations 6 to 12 inches above bottom of pile cap before piles are placed. After piles have been driven, remove loose and displaced material. Excavate to final grade, leaving solid base to receive concrete pile caps.

3. Excavation for Underground Tanks, SWM Facilitates, Basins, and Mechanical or Electrical Utility Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch. Do not disturb bottom of excavations intended as bearing surfaces.

3.4 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.5 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.

1. Clearance: 12 inches each side of pipe or conduit or as indicated.

C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

1. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

3.6 SUBGRADE INSPECTION

A. Proof-roll subgrade below the building slabs and pavements with a pneumatic-tired dump truck to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

B. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.7 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2,500 psi, may be used when approved by Architect.

1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Architect.

3.8 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.9 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud, frost, snow, or ice.

B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

C. Trenches under Footings: Backfill trenches excavated under footings and within 18 inches of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings.

D. Trenches under Roadways: Provide 4-inch-thick, concrete-base slab support for piping or conduit less than 30 inches below surface of roadways. After installing and testing, completely encase piping or conduit in a minimum of 4 inches of concrete before backfilling or placing roadway subbase course.

E. Initial Backfill: Place and compact initial backfill of subbase material, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the pipe or conduit.

1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.

F. Final Backfill: Place and compact final backfill of satisfactory soil to final subgrade elevation.

G. Warning Tape: Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs or as required by local regulatory agency.

3.10 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place and compact fill material in layers to required elevations as follows:

1. Under grass and planted areas, use satisfactory soil material.

2. Under walks and pavements, use satisfactory soil material.

3. Under steps and ramps, use engineered fill.

4. Under building slabs, use engineered fill.

5. Under footings and foundations, use engineered fill.

3.11 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.

2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.12 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill soil materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.

C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698:

1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.

2. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 92 percent.

3. Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.

4. For utility trenches, compact each layer of initial and final backfill soil material at 95 percent.

3.13 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:

1. Turf or Unpaved Areas: Plus or minus 1 inch.

2. Walks: Plus or minus 1 inch.

3. Pavements: Plus or minus 1/2 inch.

C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

3.14 SUBBASE UNDER PAVEMENTS AND WALKS

A. Place subbase course on subgrades free of mud, frost, snow, or ice.

B. On prepared subgrade, place subbase course under pavements and walks as follows:

1. Shape subbase course to required crown elevations and cross-slope grades.

2. Place subbase course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.

3. Compact subbase course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

3.15 DRAINAGE COURSE UNDER CONCRETE SLABS-ON-GRADE

A. Place drainage course on subgrades free of mud, frost, snow, or ice.

B. On prepared subgrade, place and compact drainage course under cast-in-place concrete slabs-on-grade as follows:

1. Place drainage course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.

2. Compact each layer of drainage course to required cross sections and thicknesses to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

3.16 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector to perform inspections:

B. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.

C. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

D. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Architect.

E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and

replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.17 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.18 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

~ END OF SECTION 312000 ~

SECTION 321216 – ASPHALT PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cold milling of existing asphalt pavement around the salt shed as indicated on the plans.

2. Hot-mix asphalt patching adjacent to the new concrete wall, inside and out of the salt shed for repair around the footings and other areas to provide a smooth surface inside and adjacent to the salt shed.

3. Hot-mix asphalt paving.

4. Hot-mix asphalt overlay.

B. Related Requirements:

1. Section 312000 "Earth Moving" for subgrade preparation, fill material, unbound-aggregate subbase and base courses, and aggregate pavement shoulders.

2. Refer to GeoTechnical Report prepared by Herbst/Benson and Associates, dated April 30, 2015 (Rev# 5/21/15).

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.4 INFORMATIONAL SUBMITTALS

A. Material Certificates: For each paving material. Include statement that mixes containing recycled materials will perform equal to mixes produced from all new materials.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by Montgomery County and Maryland State Highway Administration.

B. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of Montgomery County and Maryland State highway Administration for asphalt paving work.

1. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.

PART 2 - PRODUCTS

2.1 AGGREGATES

A. Coarse Aggregate: ASTM D 692/D 692M, sound; angular crushed stone, crushed gravel, or cured, crushed blast-furnace slag.

B. Fine Aggregate: ASTM D 1073, sharp-edged natural sand or sand prepared from stone, gravel, cured blast-furnace slag, or combinations thereof.

C. Mineral Filler: ASTM D 242/D 242M, rock or slag dust, hydraulic cement, or other inert material.

2.2 ASPHALT MATERIALS

A. Asphalt Binder: AASHTO M 320, PG 64-22 Level 2.

B. Tack Coat: ASTM D 977 emulsified asphalt, or ASTM D 2397 cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.

2.3 AUXILIARY MATERIALS

A. Recycled Materials for Hot-Mix Asphalt Mixes: Reclaimed asphalt pavement; reclaimed, unbound-aggregate base material; and recycled tires, asphalt shingles, or glass from sources and gradations that have performed satisfactorily in previous installations, equal to performance of required hot-mix asphalt paving produced from all new materials.

B. Herbicide: Commercial chemical for weed control, registered by the EPA, and not classified as "restricted use" for locations and conditions of application. Provide in granular, liquid, or wettable powder form.

2.4 MIXES

A. Recycled Content of Hot-Mix Asphalt: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 10 percent or more than 25 percent by weight.

1. Surface Course Limit: Recycled content no more than 10 percent by weight.

B. Hot-Mix Asphalt: Dense-graded, hot-laid, hot-mix asphalt plant mixes approved by MDSHA and complying with the following requirements:

1. Provide mixes with a history of satisfactory performance in geographical area where Project is located.

2. Base Course: Superpave 19mm PG64-22.

3. Surface Course: Superpave 12.5mm PG64-22.

PART 3 - EXECUTION

3.1 COLD MILLING

A. Clean existing pavement surface of loose and deleterious material immediately before cold milling. Remove existing asphalt pavement by cold milling to grades and cross sections indicated.

1. Mill to a depth of 2 inches.

2. Patch surface depressions deeper than 1 inch after milling, before wearing course is laid.

3.2 PATCHING

A. Asphalt Pavement: Saw cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches into perimeter of adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Recompact existing unbound-aggregate base course to form new subgrade.

B. Portland Cement Concrete Pavement: Break cracked slabs and roll as required to reseat concrete pieces firmly.

1. Remove disintegrated or badly cracked pavement. Excavate rectangular or trapezoidal patches, extending into perimeter of adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Recompact existing unbound-aggregate base course to form new subgrade.

C. Tack Coat: Before placing patch material, apply tack coat uniformly to vertical asphalt surfaces abutting the patch. Apply at a rate of 0.05 to 0.15 gal./sq. yd.

1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.

2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

D. Placing Patch Material: Fill excavated pavement areas with hot-mix asphalt base mix for full thickness of patch and, while still hot, compact flush with adjacent surface.

3.3 SURFACE PREPARATION

A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.

B. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

C. Herbicide Treatment: Apply herbicide according to manufacturer's recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted-aggregate base before applying paving materials.

D. Tack Coat: Apply uniformly to surfaces of existing pavement at a rate of 0.05 to 0.15 gal./sq. yd.

1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.

2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

3.4 PLACING HOT-MIX ASPHALT

A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand in areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.

1. Spread mix at a minimum temperature of 250 deg F.

2. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.

B. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.

C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.5 JOINTS

A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.

1. Clean contact surfaces and apply tack coat to joints.

2. Offset longitudinal joints, in successive courses, a minimum of 6 inches.

3. Offset transverse joints, in successive courses, a minimum of 24 inches.

4. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints using either "bulkhead" or "papered" method according to AI MS-22, for both "Ending a Lane" and "Resumption of Paving Operations."

3.6 COMPACTION

A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.

   1. Complete compaction before mix temperature cools to 185 deg F.

B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.

C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:

   1. Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent or greater than 96 percent.

D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.

E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.

F. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

G. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.7 <u>ASPHALT CURBS</u>

A. Construct hot-mix asphalt curbs over compacted pavement surfaces. Apply a light tack coat unless pavement surface is still tacky and free from dust. Spread mix at a minimum temperature of 250 deg F.

   1. Asphalt Mix: Same as pavement surface-course mix.

B. Place hot-mix asphalt to curb cross section indicated or, if not indicated, to local standard shapes, by machine or by hand in wood or metal forms. Tamp hand-placed materials and screed to smooth finish. Remove forms after hot-mix asphalt has cooled.

3.8 <u>INSTALLATION TOLERANCES</u>

A. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:

   1. Base Course: Plus 1/2 inch, no minus.

2. Surface Course: Plus 1/4 inch, no minus.

B. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:

1. Base Course: 1/4 inch.

2. Surface Course: 1/8 inch.

3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.

3.9 FIELD QUALITY CONTROL

A. Testing Agency: Contractor will engage a qualified testing agency to perform tests and inspections.

B. Replace and compact hot-mix asphalt where core tests were taken.

C. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

~ END OF SECTION 321216 ~

REQUEST FOR BIDS

NO. 2016-024

HI-ARCH GAMBREL SALT STORAGE BUILDING

ATTACHMENT E

Construction Drawings

CITY OF GAITHERSBURG SALT STORAGE

800 RABBITT ROAD
GAITHERSBURG, MD 20878
MONTGOMERY COUNTY

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST CITY OF GAITHERSBURG STANDARDS AND SPECIFICATIONS MANUAL, THE LATEST CITY OF GAITHERSBURG DETAIL MANUAL AND IN ACCORDANCE WITH CURRENT CITY ORDINANCES.
2. CONTRACTOR IS RESPONSIBLE FOR CONTACTING "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO ANY EXCAVATION WORK.
3. THE DEVELOPER IS RESPONSIBLE TO HOLD A "PRECONSTRUCTION" MEETING TO INCLUDE THE CONTRACTOR, CITY OF GAITHERSBURG INSPECTION PERSONNEL, PUBLIC UTILITIES, AND ANY LOCAL, STATE OR FEDERAL AGENCIES AS REQUIRED PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE CITY OF GAITHERSBURG DEPARTMENT OF PUBLIC WORKS 5 DAYS PRIOR TO THE START OF ALL CONSTRUCTION IN ACCORDANCE TO ALL PERMITS ISSUED.
5. MAXIMUM SLOPES SHALL BE NOT GREATER THAN THREE (3) FEET HORIZONTAL TO ONE (1) FOOT VERTICAL OUT SIDE THE ROAD RIGHT-OF-WAY. SLOPES WITHIN THE ROAD RIGHT-OF-WAY SHALL BE NOT GREATER THAN TWO (2) FEET HORIZONTAL TO ONE (1) FOOT VERTICAL, OR UNLESS SPECIFIED ON THE PLANS.
6. CERTIFIED COMPACTION TESTS ARE REQUIRED FOR ALL TRENCH/FILL WORK IN ACCORDANCE WITH THE LATEST EDITION OF THE SPECIFICATIONS MANUAL AND GRADING ORDINANCE. FINAL REPORTS AND CERTIFICATIONS SHALL BE PROVIDED PRIOR TO PRE-FINAL INSPECTIONS.
7. CERTIFIED COMPACTION TESTS AND GEOTECHNICAL REPORTS SHALL BE SUBMITTED ON A REGULAR BASIS THROUGHOUT THE COURSE OF CONSTRUCTION AS REQUIRED BY THE SPECIFICATIONS MANUAL.
8. AS-BUILT PLANS SHALL BE SUBMITTED PRIOR TO PRE-FINAL INSPECTIONS FOR ALL DISCIPLINES.
9. WITH APPROVAL FROM THE CITY OF GAITHERSBURG SEDIMENT CONTROL INSPECTOR, ALL EROSION AND SEDIMENT CONTROL STRUCTURES MUST BE REMOVED PRIOR TO THE RELEASE OF BONDS.
10. THERE ARE NO KNOWN HISTORIC SITES LOCATED WITHIN THIS SITE.
11. OBSTRUCTIONS SHOWN ON THIS DRAWING ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. THE CONTRACTOR MUST VERIFY ALL SUCH INFORMATION TO HIS OWN SATISFACTION. IN THE EVENT THAT INFORMATION IS IN CONFLICT WITH INFORMATION OUTLINED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT PRIOR TO STARTING ANY WORK.
12. ADJUST TOP OF CURB GRADES TO SMOOTH TRANSITION.
13. SAWCUT EXISTING PAVING AS SHOWN ON DEMOLITION PLAN SHEET C-0.01.
14. STRIP AND RESURFACE EXISTING PAVING AS NEEDED TO PROVIDE SMOOTH TRANSITION TO EXISTING SURFACE.
15. IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NORMALLY BE REQUIRED TO COMPLETE THIS PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLETE SUCH WORK.
16. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER OF ANY DEVIATION FROM THIS PLAN PRIOR TO ANY CHANGE BEING MADE. ANY DEVIATION FROM THIS PLAN WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
17. SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS, THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. SHOULD THE CONTRACTOR MAKE FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER, THEN THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THOSE CHANGES.
18. THE CONTRACTOR SHALL NOTE THAT IN CASE OF ANY DISCREPANCY BETWEEN THE SCALED AND FIGURED DIMENSIONS SHOWN ON THESE PLANS THE FIGURED DIMENSIONS SHALL GOVERN.
19. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL TIE-IN ELEVATIONS.
20. FILL IN STRUCTURAL AND PAVEMENT AREAS SHALL BE PLACED IN HORIZONTAL, EIGHT-INCH MAXIMUM LOOSE LIFTS AND COMPACTED TO AT LEAST 95 PERCENT OF THE MODIFIED PROCTOR. MAXIMUM DRY DENSITY PER ASTM D-1557. IN AREAS TO SUPPORT FLOOR SLABS AND PAVEMENTS THE UPPERMOST ONE FOOT (AFTER COMPACTION) SHALL BE COMPACTED TO 98 PERCENT OF THE MAXIMUM DRY DENSITY. THE MOISTURE CONTENT OF THE FILL SHALL BE PROPERLY CONTROLLED DURING PLACEMENT. IN BUILDING AREAS FILL SHALL EXTEND A MINIMUM OF 10 FEET BEYOND THE BUILDING LIMITS AND FILL SLOPES NO STEEPER THAN 2:1 SHALL BE USED. SEE THE PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.
21. ALL CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THE LATEST CITY OF GAITHERSBURG STANDARD DETAILS AND SPECIFICATIONS.
22. CONTRACTOR WILL ADJUST ALL FRAMES, GRATES AND COVERS OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF THE CONTRACT TO THE PROPOSED GRADES, AS REQUIRED.
23. THE CONTRACTOR WILL MAINTAIN POSITIVE DRAINAGE TO SWALES AND/ORSTORM DRAIN SYSTEMS AT ALL TIMES.

SHEET INDEX

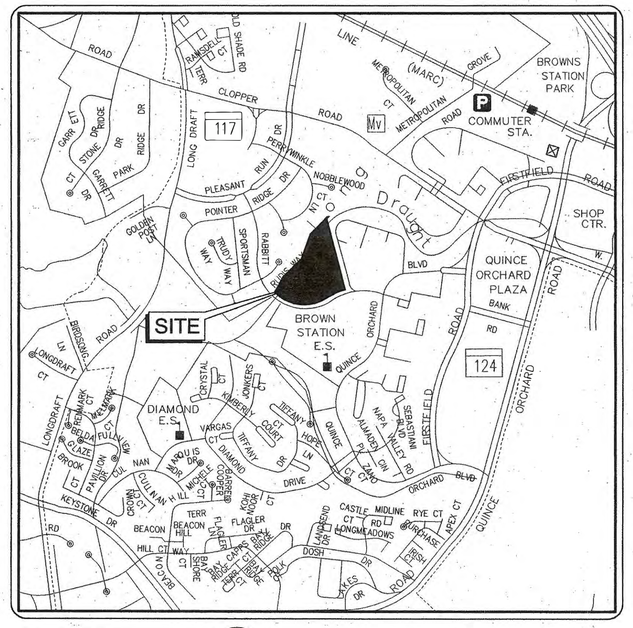
SHEET NUMBER	SHEET DESCRIPTION
C-0.00	TITLE SHEET
C-0.01	EXISTING CONDITIONS
C-1.00	SITE PLAN/GRADING PLAN
C-1.01	SEDIMENT & EROSION CONTROL NOTES & DETIALS
C-1.02	SEDIMENT & EROSION CONTROL NOTES & DETIALS
C-1.03	SEDIMENT & EROSION CONTROL NOTES & DETIALS

OWNER/APPLICANT:
CITY OF GAITHERSBURG
31 S SUMMIT AVE
GAITHERSBURG, MD 20877
PHONE: 301-258-6370
CONTACT: SEAN STEVENS

ENGINEER:
KCI TECHNOLOGIES, INC.
11850 WEST MARKET PLACE, SUITE A
FULTON, MARYLAND 20759
PHONE: (410) 792-8086
CONTACT: TIMOTHY H. MILLER

SITE DATA:

ADDRESS:	800 RABBITT ROAD GAITHERSBURG, MD 20828
TAX ACCOUNT:	02018277
TOTAL SITE AREA:	17.26 ACRES
TAX MAP/GRID:	58/A1
ELECTION DISTRICT:	09
ADC MAP:	5047/D8
WSSC GRID:	223NW11
CURRENT ZONING:	(LOW DENSITY RESIDENTIAL) R-A
CURRENT USE:	CITY MAINTENANCE FACILITY
PROPOSED USE:	CITY MAINTENANCE FACILITY



VICINITY MAP
SCALE: 1"=1000'

CITY OF GAITHERSBURG PLANNING COMMISSION
31 SOUTH SUMMIT AVENUE, GAITHERSBURG, MARYLAND 20877

SITE PLAN APPROVAL

AT THE REGULARLY SCHEDULED MEETING OF THE PLANNING COMMISSION HELD ON JUNE 17, 2015
APPLICATION NO. AFP-7038-2015 WAS GRANTED
AMENDMENT TO FINAL PLAN APPROVAL
WITH ONE (1) CONDITIONS. SEE S.D.A LETTER.
DATE 7/10/2015* BY Trudy Schwarz

NOTE: ANY REVISIONS TO SIGNED PLANS MUST BE APPROVED BY THE PLANNING COMMISSION OR PLANNING STAFF

* Modified Notes 2-22-2016 TWS

CITY OF GAITHERSBURG
DEPARTMENT OF PUBLIC WORKS
FINAL APPROVAL
APPLICATION NO. AFP-7038-2013
DATE 07-09-15
BY
Michael D. Johnson
7-9-15

MARYLAND
MICHAEL D. JOHNSON
33772
PROFESSIONAL ENGINEER
2/15/16

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

MISS UTILITY

CALL "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF WORK. THE EXCAVATOR MUST NOTIFY ALL PUBLIC UTILITY COMPANIES WITH UNDERGROUND FACILITIES IN THE AREA OF PROPOSED EXCAVATION AND HAVE THOSE FACILITIES LOCATED BY THE UTILITY COMPANIES PRIOR TO COMMENCING EXCAVATION

KCI TECHNOLOGIES
ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS
11850 WEST MARKET PLACE
SUITE A
FULTON, MD 20759
TELEPHONE: (410) 792-8086
FAX: (410) 792-7419

REVISIONS

NO.	DATE	DESCRIPTION	BY

DATE 07/01/2015
SCALE AS SHOWN
DESIGNED BY BEW
CHECKED BY THM

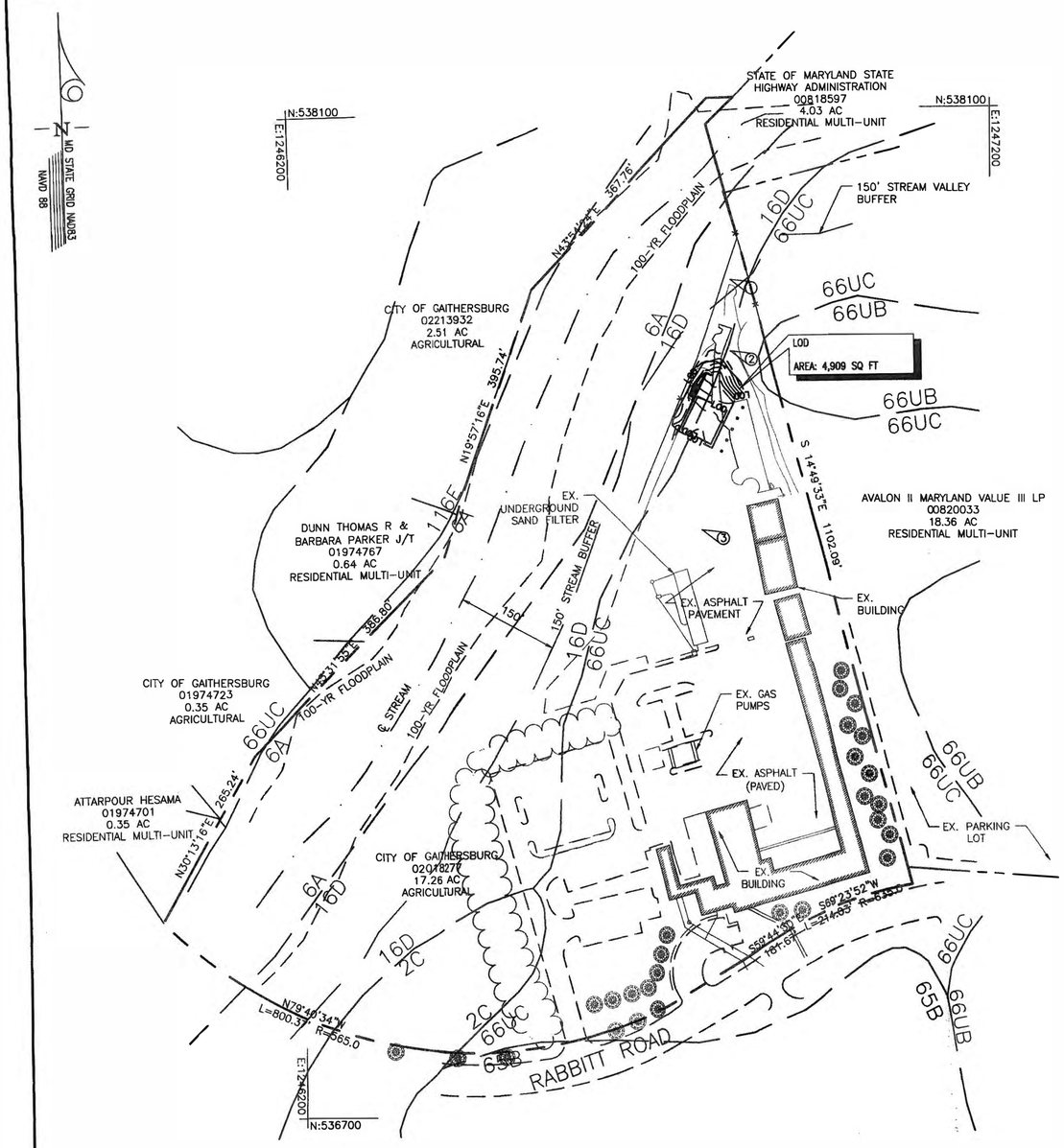
CITY OF GAITHERSBURG SALT STORAGE
800 RABBITT ROAD, GAITHERSBURG, MD 20878
TAX ID: 02018277

TITLE SHEET

CITY OF GAITHERSBURG ELECTION DISTRICT 09

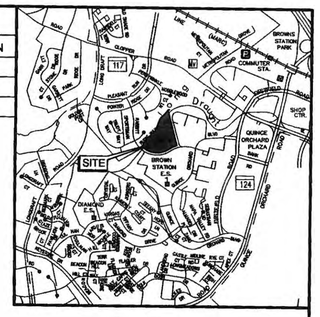
DRAWING NO. C-0.00
SHEET 1 OF 6
KCI JOB NUMBER 27157804

M:\2015\27157804\DRAWINGS\C-0.00 TITLE PAGE.DWG



SITE PLAN
SCALE: 1"=100'

BENCHMARK DATA			
BM	NORTHING	EASTING	ELEVATION
1	537861.43	1246827.19	410.82
2	537761.32	1246825.49	417.43
3	537511.71	1246780.64	403.63



VICINITY MAP
SCALE: 1" = 2000'
ADCMAP/GRID: 5047/D8
WSSC GRID: 223NW11

DEMOLITION NOTES

1. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" (1-800-257-7777) AT LEAST FIVE 5 WORKING DAYS PRIOR TO STARTING ANY WORK.
2. TOPOGRAPHIC & BOUNDARY INFORMATION SHOWN HEREON IS BASED ON A SURVEY CONDUCTED BY KCI TECHNOLOGIES INC. DATED APRIL, 2015 AND REFLECTS NATIONAL GEODETIC SURVEY HORIZONTAL NAD '83 (1991) AND VERTICAL '88 VALUES.
3. EXISTING UTILITY INFORMATION SHOWN HEREON IS BASED ON THE BEST AVAILABLE INFORMATION, WHICH INCLUDES A FIELD SURVEY CONDUCTED BY KCI TECHNOLOGIES, INC. IN APRIL 2015,, PLANS OBTAINED FROM AVAILABLE RECORDS.
4. OBSTRUCTIONS SHOWN ON THIS DRAWING ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. KCI TECHNOLOGIES, INC. DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OR THE COMPLETENESS OF THE INFORMATION GIVEN. THE CONTRACTOR SHALL VERIFY ALL SUCH INFORMATION TO HIS OWN SATISFACTION. IN THE EVENT THAT INFORMATION IIS IN CONFLICT WITH INFORMATION OUTLINED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT PRIOR TO STARTING ANY WORK
5. CONTRACTOR SHALL REMOVE PAVEMENT, CURB AND GUTTER, AND CONCRETE WALK TO LIMITS INDICATED ON THE DRAWING.
6. CONTRACTOR SHALL NOT PROCEED WITH ANY DEMOLITION WORK UNTIL ALL UTILITY DISCONNECTIONIS HAVE BEEN COMPLETED AND VERIFIED IN WRITING BY UTILITY COMPANY, AND/OR OWNERR.
7. BURNING OF (COMBUSTIBLE MATERIALS FROM DEMOLISHED STRUCTURES WILL NOT BE PERMITTED ON—SITE.
8. ALL DEMOLITION MATERIAL TO REMAIN WITH THE LIMIT OF DISTURBANCE. ALL STOCKPILED MATERIALS ARE: TO REMAIN WITHIN THE STOCKPILE/STAGING AREA AS SHOWN ON THE APPROVED SEDIMENT & EROSION CONTROL PLAN. ALL SEDIMENT CONTROL MEASURES ARE TO BE IN PLACE PRIOR TO BEGINNING ANY SITE WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAUL ALL DEMOLITION MATERIAL OFFSITE TO AN APPROVED FACILITY.
9. CONTRACTOR T'O SUBMIT A DEMOLITION/CONSTRUCTION STAGING PLAN TO THE OWNER AND ARCHITECT FOR APPROVAL, PRIOR TO BEGINNING AND CONSTRUCTION.
10. CONTRACTOR T'O VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES SHOWN HEREON BEFORE STARTIING ANY WORK ON THESE PLANS. CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR THE COST OF ANY AND ALL DAMAGES WHICH OCCUR AS A RESULT OF A FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES TO REMAIN. CONTRACTOR TO NOTIFY THE ENGINEER ONCE TEST PITS HAVE BEEN COMPLETED.
11. ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
12. CONTRACTOR SHALL ADJUST ALL FRAMES, GRATES AND COVERS OF ALL EXISTING UTILITIES WITHIN THE LIMIITS OF THE CONTRACT TO THE PROPOSED GRADES AS REQUIRED.
13. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM STRUCTURES AT ALL TIMES.
14. CONTRACTOR SHALL INSTALL SEDIMENT CONTROLS PRIOR TO BEGINNING ANY WORK AND SHALL MAINTAIN SEDIMENT CONTROLS THROUGHOUT THE ENTIRE DURATION OF CONSTRUCTION ACTIVITIES, IN ACCORDANCE WITH ALL APPLICABLE STATE & COUNTY REQUIREMENTS.
15. ALL UTILITY LINES, STRUCTURES, ETC. SHALL BE REMOVED IN THEIR ENTIRETY UNLESS OTHERWISE INDICATED. UTILITY AND UNDERGROUND STRUCTURE REMOVAL AND/OR ABANDONMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE LATEST MONTGOMERY CO. STD. DETAILS AND SPECIFICATIONS. ALL EXCAVATION WILL BE BACKFILLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. IN THE EVENT THAT A PORTION OF A UTILITY IS TO BE REMOVED THE CONTRACTOR WILL TERMINATE & CAP TO THE LIMITS INDICATED IN ACCORDANCE WITH ALL STATE & LOCAL REQUIREMENTS.
16. IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NORMALLY BE REQUIRED TO COMPLETE THIS PROJECT WILL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLETE SUCH WORK.
17. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ARCHITECT & ENGINEER OF ANY DEVIATION FROM THIS PLAN PRIOR TO ANY CHANGE BEING MADE. ANY DEVIATION FROM THIS PLAN WITHOUT WRITTEN AUTHORIZATION FROM THE ARCHITECT & ENGINEER WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
18. SOIL BORINGS WERE COMPLETED BY HERBST/BENSON & ASSOCIATES. DATED APRIL 30, 2015. A COPY OF THE GEOTECHNICAL REPORT HAS BEEN INCLUDED WITH THE PROJECT MANUAL.
19. THE DEMOLITION INFORMATION SHOWN ON THIS DRAWING IS FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT LIMITS OF DEMOLITION AND REMOVAL OF AFFECTED SITE ITEMS PRIOR TO BEGINNING WORK.

SITE NOTES

OWNER/APPLICANT: CITY OF GATIERHSBURG
31 S SUMMIT AVE
GAITHERSBURG, MD 20877

1. SITE DATE:
   TAX ACCOUNT: 02018l277
   BOOK/PAGE: N/A
   ACREAGE: 17.26 AC
   ZONING: AGRICULTURAL
   SITE ADDRESS: 800 RABBITT ROAD
   GAITHERSBURG, MD 20828
2. EXISTING USE: CITY MAINTENANCE FACILITY
   PROPOSED USE: CITY MAINTENANCE FACILITY
3. SEWER IS NOT REQUIRED FOR THIS PROJECT
4. TOPOGRAPHY SHOWN HIEREON IS BASED ON BOTH A FIELD RUN SURVEY BY KCI TECHNOLOGIES, INC. ON NOVEMBER, 2014.
5. NOTIFY "MISS UTILITY" AT 1-800-257-7777 48 HOURS PRIOR TO DOING ANY EXCAVATION IN THIS AREA. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IIN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE UTILITY OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTORS FAILURE TO EXACTLY LOCATED AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
6. LIMIT OF DISTURBANCE = 4,909 SQUARE FEET

LEGEND

- PROPERTY LINE
- 220 EX. CONTOUR
- EX. EDGE OF ROAD
- EX. FENCE LINE
- EX. SIDEWALK
- EX. BUILDING
- STORM DRAIN PIPE
- G EX. GAS
- W EX. WATER
- T EX TELEPHONE LINE
- E EX ELECTRICAL LINE
- SS EX. SEWER
- EX. TREELINE
- SD STORM DRAIN
- S SEWER MANHOLE
- E ELECTRIC MANHOLE
- BORING LOCATION
- LIGHT POLE
- LOD LIMIT OF DISTURBANCE
- RcB AdB SOILS LINE

SOILS TABLE		
SOIL SYMBOL	SOIL NAME	HYDROLOGIC SOIL GROUP
2C	GLENELG SILT LOAM, 8% TO 15% SLOPES	B
6A	BAILE SILT LOAM, 0% TO 3% SLOPES	C/D
16D	BRINKLOW-BLOCKTOWN CHANNERY SILT LOAMS	C
65B	WHEATON SLIT LOAM, 0% TO 8% SLOPES	B
66UB	WHEATON URBAN COMPLEX, 0% TO 8% SLOPES	B
66UC	WHEATON URBAN COMPLEX, 8% TO 15% SLOPES	B
116E	BRINKLOW-BLOCKTOWN CHANNERY SILT LOAMS	D

GRAPHIC SCALE
100 0 100 200
SCALE: 1" = 100'

STATE OF MARYLAND
NICHOLAS A. BARKLEY
33772
PROFESSIONAL ENGINEER
9/1/15

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

KCI TECHNOLOGIES
ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS
11850 WEST MARKET PLACE
SUITE A
FULTON, MD 20759
TELEPHONE: (410) 792-8086
FAX: (410) 792-7419

REVISIONS			
NO.	DATE	DESCRIPTION	BY

DATE 07/01/2015
SCALE 1" = 100'
DESIGNED BY BEW
CHECKED BY THM

CITY OF GAITHERSBURG SALT STORAGE

800 RABBITT ROAD, GAITHERSBURG, MD 20878
TAX ID: 02018277

EXISTING CONDITIONS PLAN

CITY OF GAITHERSBURG
ELECTION DISTRICT 09

DRAWING NO. C-0.01
SHEET 2 OF 6
KCI JOB NUMBER 27157804

Wednesday, July 01, 2015 5:56:59 AM
BRIAN E. WEBER
M:\2015\27157804\DRAWINGS\C-0.01 EXISTING CONDITIONS PLAN.DWG

BENCHMARK DATA			
BM	NORTHING	EASTING	ELEVATION
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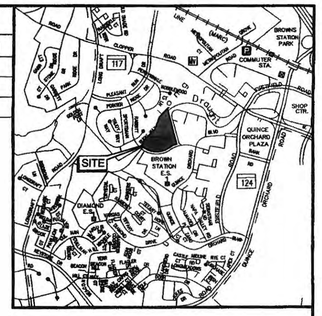
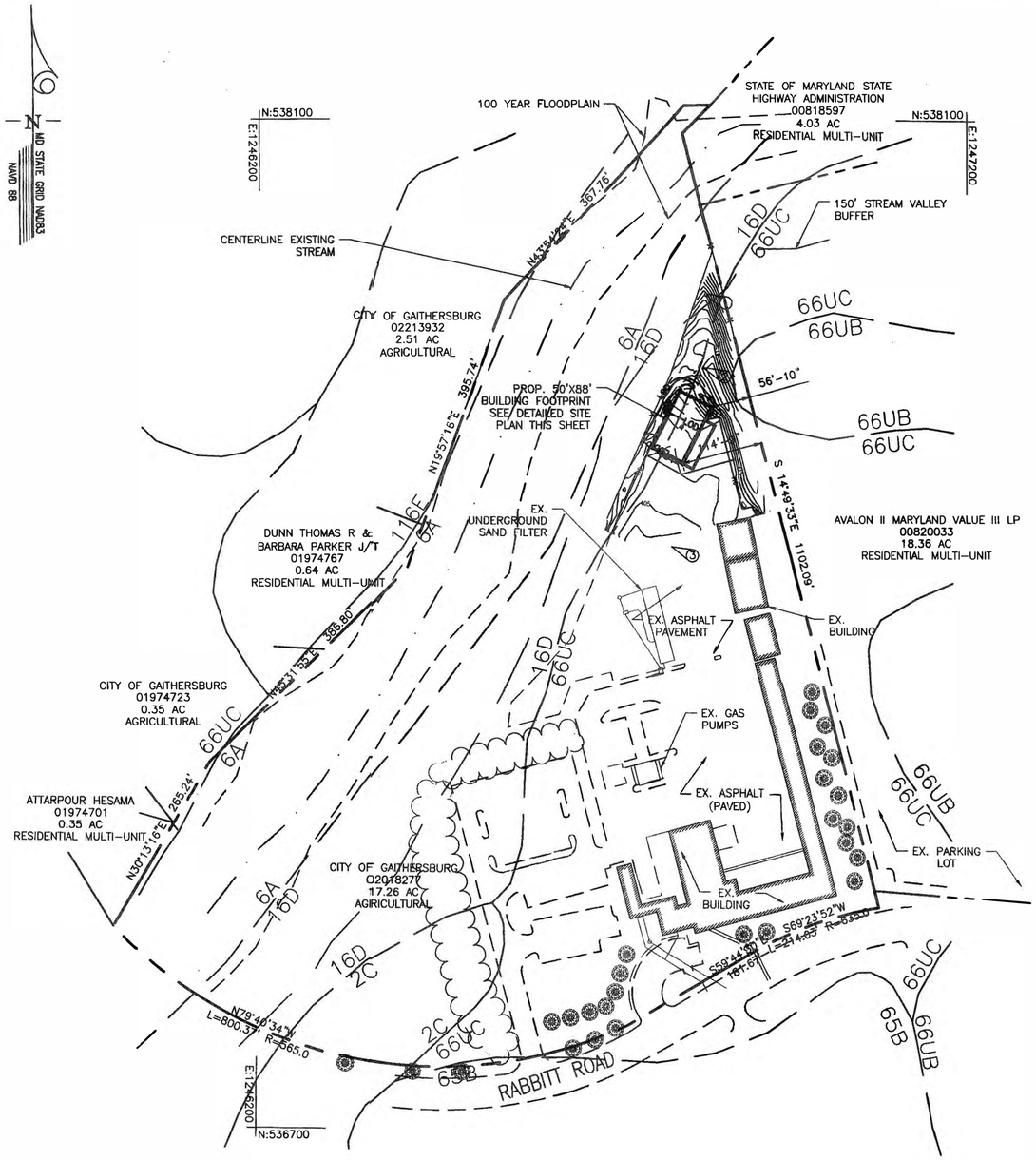
2	537761.32	1246825.49	417.43
3	537511.71	1246780.64	403.63



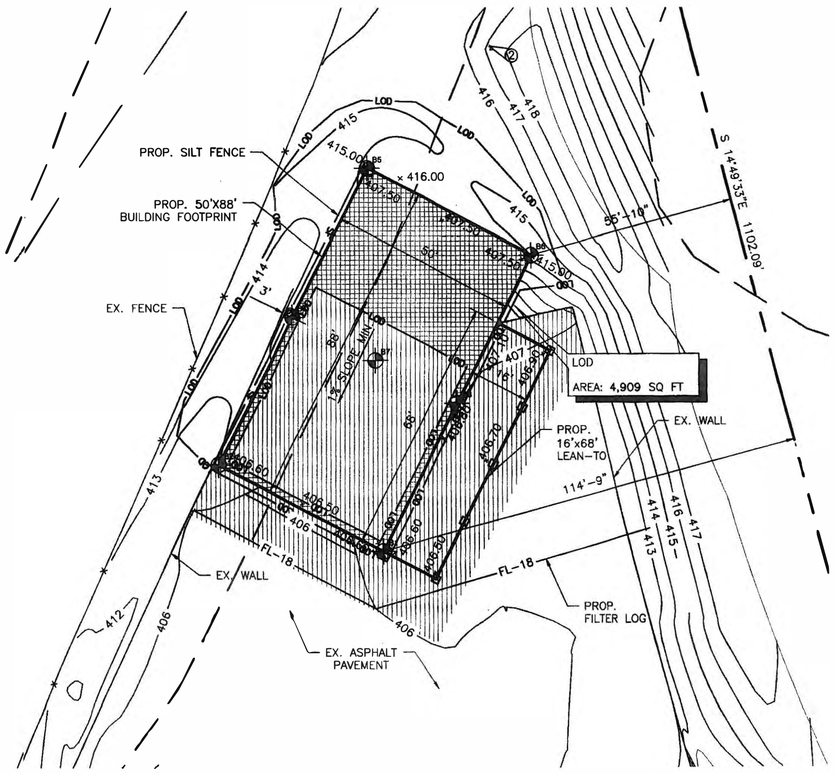
VICINITY MAP

SCALE: 1" = 2000'
ADCMAP/GRID: 5047/D8
WSSC GRID: 223NW11



SITE PLAN

SCALE: 1"=100'



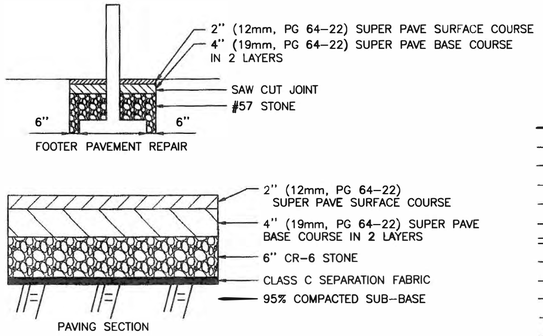
GRADING PLAN

SCALE: 1"=20'

SITE NOTES

OWNER/APPLICANT: CITY OF GATIERHSBURG
31 S SUMMIT AVE
GAITHERSBURG, MD 20877

1. SITE DATE:
   TAX ACCOUNT: 02018277
   BOOK/PAGE: N/A
   ACREAGE: 17.26 AC
   ZONING: AGRICULTURAL
   SITE ADDRESS: 800 RABBITT ROAD
   GAITHERSBURG, MD 20828
2. EXISTING USE: CITY MAINTENANCE FACILITY
   PROPOSED USE: CITY MAINTENANCE FACILITY
3. SEWER IS NOT REQUIRED FOR THIS PROJECT
4. TOPOGRAPHY SHOWN HEREON IS BASED ON BOTH A FIELD RUN SURVEY BY KCI TECHNOLOGIES, INC. ON NOVEMBER, 2014.
5. NOTIFY "MISS UTILITY" AT 1-800-257-7777 48 HOURS PRIOR TO DOING ANY EXCAVATION IN THIS AREA. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE UTILITY OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTORS FAILURE TO EXACTLY LOCATED AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
6. LIMIT OF DISTURBANCE = 4,909 SQUARE FEET
7. BUILDING = 5,488 SQUARE FEET



PAVING DETAIL

N.T.S.

LEGEND

- PROPERTY LINE
- 220 EX. CONTOUR
- EX. EDGE OF ROAD
- EX. FENCE LINE
- EX. SIDEWALK
- EX. BUILDING
- STORM DRAIN PIPE
- G EX. GAS
- W EX. WATER
- T EX TELEPHONE LINE
- E EX ELECTRICAL LINE
- SS EX. SEWER
- EX. TREELINE
- SD STORM DRAIN
- SEWER MANHOLE
- ELECTRIC MANHOLE
- BORING LOCATION
- LIGHT POLE
- LOD LIMIT OF DISTURBANCE
- RcB AdB SOILS LINE
- MILL & OVERLAY PAVING
- FULL DEPTH PAVING

SOILS TABLE		
SOIL SYMBOL	SOIL NAME	HYDROLOGIC SOIL GROUP
2C	GLENELG SILT LOAM, 8% TO 15% SLOPES	B
6A	BAILE SILT LOAM, 0% TO 3% SLOPES	C/D
16D	BRINKLOW-BLOCKTOWN CHANNERY SILT LOAMS	C
65B	WHEATON SLIT LOAM, 0% TO 8% SLOPES	B
66UB	WHEATON URBAN COMPLEX, 0% TO 8% SLOPES	B
66UC	WHEATON URBAN COMPLEX, 8% TO 15% SLOPES	B
116E	BRINKLOW-BLOCKTOWN CHANNERY SILT LOAMS	D

CITY OF GAITHERSBURG PLANNING COMMISSION
31 SOUTH SUMMIT AVENUE, GAITHERSBURG, MARYLAND 20877

SITE PLAN APPROVAL

AT THE REGULARLY SCHEDULED MEETING OF THE PLANNING COMMISSION HELD ON JUNE 17, 2015
APPLICATION NO. AFP-7038-2015 WAS GRANTED
AMENDMENT TO FINAL PLAN APPROVAL
WITH one (1) CONDITIONS. SEE S.D.A LETTER.
DATE July 10, 2015 BY Gwendy Schwarz

NOTE: ANY REVISIONS TO SIGNED PLANS MUST BE APPROVED BY THE PLANNING COMMISSION OR PLANNING STAFF

CITY OF GAITHERSBURG
DEPARTMENT OF PUBLIC WORKS
FINAL APPROVAL
APPLICATION NO. AFP-7038-2013
DATE 07-09-15
BY [signature]

Michael D. Johnson
7-9-15

GRAPHIC SCALE

100 0 100 200
SCALE: 1" = 100'

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

STATE OF MARYLAND — THOMAS A. HUMPHREY — No. 33772 — PROFESSIONAL ENGINEER
7/1/15

KCI TECHNOLOGIES
ENGINEERS
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SCIENTISTS
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REVISIONS			
NO.	DATE	DESCRIPTION	BY

DATE 07/01/2015
SCALE AS SHOWN
DESIGNED BY BEW
CHECKED BY THM

CITY OF GAITHERSBURG SALT STORAGE

800 RABBITT ROAD, GAITHERSBURG, MD 20878
TAX ID: 02018277

SITE PLAN/GRADING PLAN

CITY OF GAITHERSBURG — ELECTION DISTRICT 09

DRAWING NO. C-1.00
SHEET 3 OF 6
KCI JOB NUMBER 27157804

STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

PURPOSE

TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES

TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

CRITERIA

1. SEEDING
   A. SPECIFICATIONS
      a. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABO ATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
      b. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROIPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
      c. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
      d. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

   B. APPLICATION
      a. DRY SEEDING: THIS INCLUDES USE OF CONIVENTIONAL DROP OR BROADCAST SPREADERS.
         i. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
         ii. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
      b. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
         i. CULTIPACKING SEEDERS ARE REQUIRED TO BIURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
         ii. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
      c. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
         i. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P2O5 (PHOSPHOROUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE.
         ii. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR H DRATED LIME WHEN HYDROSEEDING.
         iii. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
         iv. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

2. MULCHING
   A. MULCH MATERIALS (IN ORDER OF PREFERENCE)
      a. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
      b. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
         i. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
         ii. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
         iii. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
         iv. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
         v. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS. DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.
   B. APPLICATION
      a. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
      b. WHEN STR W MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
      c. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
   C. ANCHORING
      a. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
         i. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND A CHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
         ii. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
         iii. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERR TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
         iv. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

PURPOSE

TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION P ACTICES ARE REQUIRED.

CRITERIA

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING TABLE

HARDINESS ZONE (FROM FIGURE B.3): 6B					FERTILIZER RATE (10-20-20)	LIME RATE
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS		
1	BARLEY	96	3/1-5/31 8/1-10/15	1.0"	436 LB/AC (10LB/1000SF)	2 TONS/AC (90LB/1000SF)
2	CEREAL RYE	112	3/1-5/15 8/1-11/15	1.0"		
3	FOXTAIL MILLET	30	5/16-7/31	0.5"		

STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

PURPOSE

TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA

1. SEED MIXTURES
   A. GENERAL USE
      a. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
      b. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL A EA PLANTING.
      c. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
      d. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 ½ POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMA Y.
   B. TURFGRASS MIXTURES
      a. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
      b. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
         i. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND E STERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
         ii. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
         iii. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IIN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
         iv. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN ARE S WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1½ TO 3 POUNDS PER 1000 SQUARE FEET.

      NOTES:
      SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE M RYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE

   c. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES
      WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A)
      CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)
      SOUTHERN MD. EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)

   d. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1½ INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
   e. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (½ TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

PERMANENT SEEDING TABLE

HARDINESS ZONE (FROM FIGURE B.3): 6B					FERTILIZER RATE (10-20-20)			LIME RATE
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	N	P_2O_5	K_2O	
4	DEERTONGUE CREEPING RED FESCUE VIRGINIA WILD RYE	15 20 5	3/15-5/15 5/16-6/15	0.5"	45LB/AC (1LB/1000SF)	90LB/AC (2LB/1000SF)	90LB/AC (2LB/1000SF)	2 TONS/AC (90LB/1000SF)
6	TALL FESCUE PERENNIAL RYEGRASS WHITE CLOVER	40 25 5	3/1-5/15 8/1-10/15	0.5"				
9	TALL FESCUE KENTUCKY BLUEGRASS	60 40	3/1-5/15 8/1-10/15	0.5"				

2. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).
   A. GENERAL SPECIFICATIONS
      a. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
      b. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF ¾ INCH, PLUS OR MINUS ¼ INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
      c. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
      d. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
      e. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.
   B. SOD INSTALLATION
      a. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
      b. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
      c. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
      d. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.
   C. SOD MAINTENANCE
      a. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
      b. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
      c. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN ⅓ OF THE GR SS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

GEOTEXTILE FABRICS

		WOVEN SILT FILM GEOTEXTILE		WOVEN MONOFILAMENT GEOTEXTILE		NONWOVEN GEOTEXTILE	
		MINIMUM AVERAGE ROLL VALUE[1]					
PROPERTY	TEST METHOD	MD	CD	MD	CD	MD	CD
GRAB TENSILE STRENGTH	ASTM D-4632	200 LB	200 LB	370 LB	250 LB	200 LB	200 LB
GRAB TENSILE ELONGATION	ASTM D-4632	15%	10%	15%	15%	50%	50%
TRAPEZOIDAL TEAR STRENGTH	ASTM D-4533	75 LB	75 LB	100 LB	60 LB	80 LB	80 LB
PUNCTURE STRENGTH	ASTM D-6241	450 LB		900 LB		450 LB	
APPARENT OPENING SIZE[2]	ASTM D-4751	U.S. SIEVE 30 (0.59 mm)		U.S. SIEVE 70 (0.21 mm)		U.S. SIEVE 70 (0.21 mm)	
PERMITTIVITY	ASTM D-4491	0.05 SEC^{-1}		0.28 SEC^{-1}		1.1 SEC^{-1}	
ULTRAVIOLET RESISTEANCE RETAINED AT 500 HOURS	ASTM D-4355	70% STRENGTH		70% STRENGTH		70% STRENGTH	

[1] ALL NUMERIC VALUES EXCEPT APPARENT OPENING SIZE (AOS) REPRESENT MINIMUM AVERAGE ROLL VALUES (MARV). MARV IS CALCULATED AS THE TYPICAL MINUS TWO STANDARD DEVIATIONS. MD IS MACHINE DIRECTION; CD IS CROSS DIRECTION.

[2] VALUES FOR AOS REPRESENT THE AVERAGE MAXIMUM OPENING.

GEOTEXTILES MUST BE EVALUATED BY THE NATIONAL TRANSPORTATION PRODUCT EVALUATION PROGRAM (NTPEP) AND CONFORM TO THE VALUES IN TABLE H.1.

THE GEOTEXTILE MUST BE INERT TO COMMONLY ENCOUNTERED CHEMICALS AND HYDROCARBONS AND MUST BE ROT AND MILDEW RESISTANT. THE GEOTEXTILE MUST BE MANUFACTURED FROM FIBERS CONSISTING OF LONG CHAIN SYNTHETIC POLYMERS AND COMPOSED OF A MINIMUM OF 95 PERCENT BY WEIGHT OF POLYOLEFINS OR POLYESTERS, AND FORMED INTO A STABLE NETWORK SO THE FILAMENTS OR YARNS RETAIN THEIR DIMENSIONAL STABILITY RELATIVE TO E CH OTHER, INCLUDING SELVAGES.

WHEN MORE THAN ONE SECTION OF GEOTEXTILE IS NECESSARY, OVERLAP THE SECTIONS BY AT LEAST ONE FOOT. THE GEOTEXTILE MUST BE PULLED TAUT OVER THE APPLIED SURFACE. EQUIPMENT MUST NOT RUN OVER EXPOSED FABRIC. WHEN PLACING RIPRAP ON GEOTEXTILE, DO NOT EXCEED A ONE FOOT DROP HEIGHT.

TABLE H.2: STONE SIZE

TYPE	SIZE RANGE	D_{50}	D_{100}	AASHTO	MIDSIZE WEIGHT[3]
NUMBER 57[1]	3/8 TO 1-1/2 INCH	1/2 IN	1-1/2 IN	M-43	N/A
NUMBER 1	2 TO 3 INCH	2-1/2 IN	3 IN	M-43	N/A
RIPRAP[2] (CLASS 0)	4 TO 7 INCH	5-1/2 IN	7 IN	N/A	N/A
CLASS I	N/A	9-1/2 IN	15 IN	N/A	40 LB
CLASS II	N/A	16 IN	24 IN	N/A	200 LB
CLASS III	N/A	23 IN	34 IN	N/A	600 LB

[1] THIS CL SSIFICATION IS TO BE USED ON THE UPSTREAM FACE OF STONE OUTLETS AND CHECK DAMS.

[2] THIS CLASSIFICATION IS TO BE USED FOR GABIONS.

[3] OPTIMUM GRADATION IS 50 PERCENT OF THE STONE BEING ABOVE AND 50 PERCENT BELOW THE MIDSIZE.

STONE MUST BE COMPOSED OF A WELL GRADED MIXTURE OF STONE SIZED SO THAT FIFTY (50) PERCENT OF THE PIECES BY WEIGHT ARE LARGER THA THE SIZE DETERMINED BY USING THE CHARTS. A WELL GRADED MIXTURE, AS USED HEREIN, IS DEFINED AS A MIXTURE COMPOSED PRIMARILY OF LARGER STONE SIZES BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE SMALLER VOIDS BETWEEN THE STONES. THE DIAMETER OF THE LARGEST STONE IN SUCH A MIXTURE MUST NOT EXCEED THE RESPECTIVE D_{100} SELECTED FROM TABLE H.2. THE D50 REFERS TO THE MEDIAN DIAMETER OF THE STONE. THIS IS THE SIZE FOR WHICH 50 PERCENT, BY WEIGHT, WILL BE SMALLER AND 50 PERCENT WILL BE LARGER.

NOTE: RECYCLED CONCRETE EQUIVALENT MAY BE SUBSTITUTED FOR ALL STONE CLASSIFICATIONS FOR TEMPORARY CONTROL MEASURES ONLY. CONCRETE BROKEN INTO THE SIZES MEETING THE APPROPRIATE CLASSIFICATION, CONTAINING NO STEEL REINFORCEMENT, AND HAVING A MINIMUM DENSITY OF 150 POUNDS PER CUBIC FOOT MAY BE USED AS AN EQUIVALENT.

CITY OF GAITHERSBURG
DEPARTMENT OF PUBLIC WORKS
FINAL APPROVAL
APPLICATION NO. AFP-7038-2013
DATE 07-09-15
BY [signature]

Michael D. Tohnson
7-9-15

STATE OF MARYLAND
NICHOLAS A. BARCZAK
No. 33772
PROFESSIONAL ENGINEER
7/1/15

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

KCI TECHNOLOGIES
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REVISIONS			
NO.	DATE	DESCRIPTION	BY

DATE 07/01/2015
SCALE AS SHOWN
DESIGNED BY BEW
CHECKED BY THM

CITY OF GAITHERSBURG SALT STORAGE
800 RABBITT ROAD, GAITHERSBURG, MD 20878
TAX ID: 02018277

SEDIMENT & EROSION CONTROL DETAILS AND NOTES

CITY OF GAITHERSBURG
ELECTION DISTRICT 09

DRAWING NO. C-1.01
SHEET 4 OF 6
KCI JOB NUMBER 27157804

STANDARDS AND SPECIFICATIONS FOR LAND GRADING

DESIGN CRITERIA

THE GRADING PLAN SHOULD BE BASED ON THE INCORPORATION OF BUILDING DESIGNS AND STREET LAYOUTS THAT FIT AND UTILIZE EXISTING TOPOGRAPHY AND DESIRABLE NATURAL SURROUNDINGS TO AVOID EXTREME GRADE MODIFICATIONS. INFORMATION SUBMITTED MUST PROVIDE SUFFICIENT TOPOGRAPHIC SURVEYS AND SOIL INVESTIGATIONS TO DETERMINE LIMITATIONS THAT MUST BE IMPOSED ON THE GRADING OPERATION RELATED TO SLOPE STABILITY, ADJACENT PROPERTIES, DRAINAGE PATTERNS, MEASURES FOR WATER REMOVAL, AND VEGETATIVE TREATMENT, ETC.

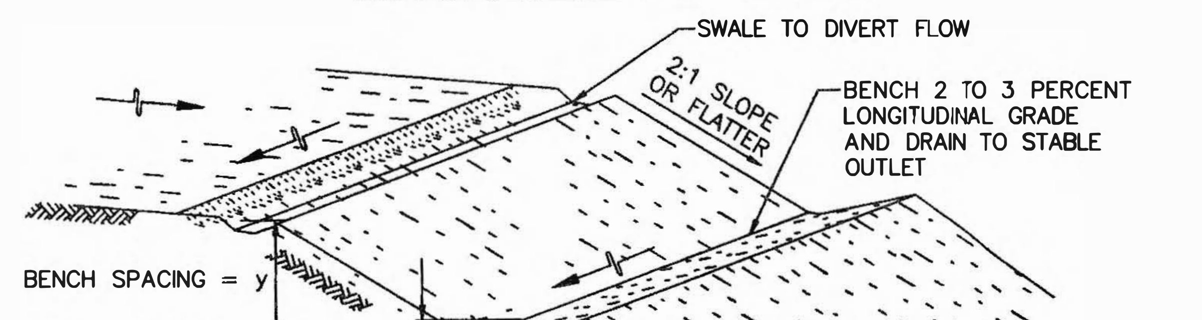
MANY JURISDICTIONS HAVE REGULATIONS AND DESIGN PROCEDURES ALREADY ESTABLISHED FOR LAND GRADING THAT MUST BE FOLLOWED. THE PLAN MUST SHOW EXISTING AND PROPOSED CONTOURS FOR THE AREA(S) TO BE GRADED INCLUDING PRACTICES FOR EROSION CONTROL, SLOPE STABILIZATION, AND SAFE CONVEYANCE OF RUNOFF (E.G., WATERWAYS, LINED CHANNELS, REVERSE BENCHES, GRADE STABILIZATION STRUCTURES). THE GRADING/CONSTRUCTION PLANS ARE TO INCLUDE THE PHASING OF THESE PRACTICES AND CONSIDERATION OF THE FOLLOWING:

1. PROVISIONS TO SAFELY CONVEY SURFACE RUNOFF TO STORM DRAINS, PROTECTED OUTLETS OR STABLE WATER COURSES TO ENSURE THAT SURFACE RUNOFF WILL NOT DAMAGE SLOPES OR OTHER GRADED AREAS.
2. CUT AND FILL SLOPES, STABILIZED WITH GRASSES, NO STEEPER THAN 2:L (WHERE THE SLOPE IS TO BE MOWED, THE SLOPE SHOULD BE NO STEEPER THAN 3:L, BUT 4:L IS PREFERRED BECAUSE OF SAFETY FACTORS RELATED TO MOWING STEEP SLOPES.) SLOPES STEEPER THAN 2:L REQUIRE SPECIAL DESIGN AND STABILIZATION CONSIDERATIONS TO BE SHOWN ON THE PLANS.
3. BENCHING PER DETAIL B-3-1 WHENEVER THE VERTICAL INTERVAL (HEIGHT) OF ANY 2:L SLOPE EXCEEDS 20 FEET; FOR 3:L SLOPES, WHEN IT EXCE EB 30 FEET; AND FOR 4: SLOPES, WHEN IT EXCEEDS 40 FEET. LOCATE BENCHES TO DIVIDE THE SLOPE FACE AS EQUALLY AS POSSIBLE AND TO CONVEY THE WATER TO A STABLE OUTLET. SOILS, SEEPS, ROCK OUTCROPS, ETC. ARE TO BE TAKEN INTO CONSIDERATION WHEN DESIGNING BENCHES.
   A. PROVIDE BENCHES WITH A MINIMUM WIDTH OF SIX FEET FOR EASE OF MAINTENANCE.
   B. DESIGN BENCHES WITH A REVERSE SLOPE OF 6:L OR FLATTER TO THE TOE OF THE UPPER SLOPE AND WITH A MINIMUM OF ONE FOOT IN DEPTH. GRADE THE LONGITUDINAL SLOPE OF THE BENCH BETWEEN 2 PERCENT AND 3 PERCENT, UNLESS ACCOMPANIED BY APPROPRIATE DESIGN AND COMPUTATIONS.
   C. THE MAXIMUM ALLOWABLE FLOW LENGTH WITHIN A BENCH IS 800 FEET UNLESS ACCOMPANIED BY APPROPRIATE DESIGN AND COMPUTATIONS.
4. DIVERSION OF SURFACE WATER FROM THE FACE OF ALL CUT AND FILL SLOPES USING EARTH DIKES OR SWALES. CONVEY SURFACE WATER DOWN SLOPE USING A DESIGNED STRUCTURE, AND:
   A. PROTECT THE FACE OF ALL GRADED SLOPES FROM SURFACE RUNOFF UNTIL THEY ARE STABILIZED.
   B. DO NOT SUBJECT THE SLOPE'S FACE TO ANY CONCENTRATED FLOW OF SUR FACE WATER SUCH AS FROM NATURAL DRAINAGE WAYS, GRADED SWALES, DOWNSPOUTS, ETC.
   C. PROTECT THE FACE OF THE SLOPE BY SPECIAL EROSION CONTROL MATERIALS TO INCLUDE, BUT NOT BE LIMITED TO, APPROVED VEGETATIVE STABILIZATION PRACTICES, RIPRAP OR OTHER APPROVED STABILIZATION METHODS.
5. SERRATED SLOPE AS SHOWN IN DETAIL B-3-2. THE STEEPEST ALLOWABLE SLOPE FOR RIPABLE ROCK IS 1.5:1. FOR NON ROCK SURFACES, THE SLOPES ARE TO BE 2:1 O R FLATTER. THESE STEPS WILL WEATHER AND ACT TO HOLD MOISTURE, LIME, FERTILIZER AND SEED THUS PRODUCING A MUCH QUICKER AND LONGER LIVED VEGETATIVE COVER AND BETTER SLOPE STABILIZATION.
6. SUBSURFACE DRAINAGE PROVISIONS. PROVIDE SUBSURFACE DRAINAGE WHERE NECESSARY TO INTERCEPT SEEPAGE THAT WOULD OTHERWISE ADVERSELY AFFECT SLOPE STABILITY OR CREATE EXCESSIVELY WET SITE CONDITIONS.
7. PROXIMITY TO ADJACENT PROPERTY. SLOPES MUST NOT BE CREATED CLOSE TO PROPERTY LINES WITHOUT ADEQUATE PROTECTION AGAINST SEDIMENTATION, EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE, OR OTHER RELATED DAMAGES.
8. QUALITY OF FILL MATERIAL. FILL MATERIAL MUST BE FREE OF BRUSH, RUBBISH, LOGS, STUMPS, BUILDING DEBRIS, AND OTHER OBJECTIONABLE MATERIAL. DO NOT PLACE FROZEN MATERIALS IN THE FILL NOR PLACE THE FILL MATERIAL ON A FROZEN FOUNDATION.
9. STABILIZATION. STABILIZE ALL DISTURBED AREAS STRUCTURALLY OR VEGETATIVELY IN COMPLIANCE WITH SECTION B-4 STANDARDS AND SPECIFICATIONS FOR STABILIZATION PRACTICES.

MAINTENANCE

THE LINE, GRADE, AND CROSS SECTION OF BENCHING AND SERRATED SLOPES MUST BE MAINTAINED. BENCHES AND SERRATED SLOPES MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

DETAIL B-3-1 BENCHING

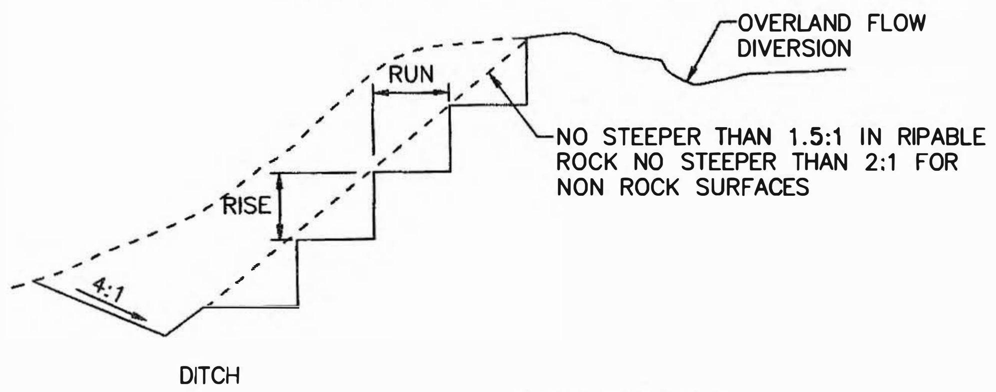


SLOPE	y (MAX.)
2:1	20 FT
3:1	30 FT
4:1	40 FT

CONSTRUCTION SPECIFICATIONS

1. USE FILL MATERIAL FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS, AND OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
2. DO NOT INCORPORATE FROZEN, SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS INTO FILL SLOPES OR STRUCTURAL FILLS. DO NOT PLACE FILL ON A FROZEN FOUNDATION.
3. PLACE ALL FILL IN LOOSE LIFTS NOT TO EXCEED 8 INCHES AND THEN COMPACT.
4. COMPACT ALL FILLS AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, OR OTHER RELATED PROBLEMS. COMPACT FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES, CONDUITS, ETC., IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
5. HANDLE SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION IN ACCORDANCE WITH SECTION H-2 SUBSURFACE DRAINS OR OTHER APPROVED MEII-IODS.
6. MAINTAIN LINE, GRADE, AND CROSS SECTION OF BENCHING. STABILIZE IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION CRITERIA OR AS SPECIFIED ON II-IE APPROVED EROSION AND SEDIMENT CONTROL PLAN. INSTALLATION OF EROSION CONTROL MATTING MAY BE NECESSARY IN BENCH/SWALE INVERTS. CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
7. KEEP ALL BENCHES FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.

DETAIL B-3-2 SERRATED SLOPES



TYPICAL SECTION

CONSTRUCTION SPECIFICATIONS

1. DIVERT OVERLAND FLOW FROM THE TOP OF ALL SERRATED CUT SLOPES AND CARRY TO A SUITABLE OUTLET.
2. MAKE SERRATIONS AS THE EXCAVATION PROGRESSES.
3. CONSTRUCT EACH STEP OR SERRATION ON THE CONTOUR. RISE & RUN DIMENSIONS WILL VARY DEPENDING ON THE FINAL SLOPE RATIO. FOR RIPABLE ROCK SURFACES, MAKE TWO FOOT VERTICAL (RISE) AND THREE FOOT HORIZONTAL (RUN) SERRATIONS AT A SLOPE RATIO NO STEEPER THAN 1.5:1. FOR NON ROCK SURFACES, MAKE TWO FOOT VERTICAL (RISE) AND FOUR FOOT HORIZONTAL (RUNS) SERRATIONS AT A SLOPE RAIIO NO STEEPER THAN 2:1.
4. KEEP ALL BENCHES FREE OF SEDIMENT DURING ALL PHASES OF CONSTRUCTION.
5. HANDLE SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION IN ACCORDANCE WITH SECTION H-2 SUBSURFACE DRAINS OR OTHER APPROVED METHODS.
6. MAINTAIN LINE, GRADE, AND CROSS SECTION OF SERRATED SLOPES. TEMPORARILY OR PERMANENTLY STABILIZE ALL GRADED, NON ROCK SURFACES IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENTS OR AS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL U.S. DEPARTMENT OF AGRICULTURE NATURAL.

STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

PURPOSE

TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL.

CONDITIONS WHERE PRACTICE APPLIES

ON ALL DISTURBED AREAS NOT STABILIZED BY OTHER METHODS. THIS SPECIFICATION IS DIVIDED INTO SECTIONS ON INCREMENTAL STABILIZATION; SOIL PREPARATION, SOIL AMENDMENTS AND TOPSOILING; SEEDING AND MULCHING; TEMPORARY STABILIZATION; AND PERMANENT STABILIZATION.

EFFECTS ON WATER QUALITY AND QUANTITY

STABILIZATION PRACTICES ARE USED TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL. WHEN SOIL IS STABILIZED WITH VEGETATION, THE SOIL IS LESS LIKELY TO ERODE AND MORE LIKELY TO ALLOW INFILTRATION OF RAINFALL, THEREBY REDUCING SEDIMENT LOADS AND RUNOFF TO DOWNSTREAM AREAS. PLANTING VEGETATION IN DISTURBED AREAS WILL HAVE AN EFFECT ON THE WATER BUDGET, ESPECIALLY ON VOLUMES AND RATES OF RUNOFF, INFILTRATION, EVAPORATION, TRANSPIRATION, PERCOLATION, AND GROUNDWATER RECHARGE. OVER TIME, VEGETATION WILL INCREASE ORGANIC MATTER CONTENT AND IMPROVE THE WATER HOLDING CAPACITY OF THE SOIL AND SUBSEQUENT PLANT GROWTH. VEGETATION WILL HELP REDUCE THE MOVEMENT OF SEDIMENT, NUTRIENTS, AND OTHER CHEMICALS CARRIED BY RUNOFF TO RECEIVING WATERS. PLANTS WILL ALSO HELP PROTECT GROUNDWATER SUPPLIES BY ASSIMILATING THOSE SUBSTANCES PRESENT WITHIN THE ROOT ZONE. SEDIMENT CONTROL PRACTICES MUST REMAIN IN PLACE DURING GRADING, SEEDBED PREPARATION, SEEDING, MULCHING, AND VEGETATIVE ESTABLISHMENT.

ADEQUATE VEGETATIVE ESTABLISHMENT

INSPECT SEEDED AREAS FOR VEGETATIVE ESTABLISHMENT AND MAKE NECESSARY REPAIRS, REPLACEMENTS, AND RESEEDINGS WITHIN THE PLANTING SEASON.

1. ADEQUATE VEGETATIVE STABILIZATION REQUIRES 95 PERCENT GROUNDCOVER.
2. IF AN AREA HAS LESS THAN 40 PERCENT GROUNDCOVER, RESTABILIZE FOLLOWING THE ORIGINAL RECOMMENDATIONS FOR LIME, FERTILIZER, SEEDBED PREPARATION, AND SEEDING.
3. IF AN AREA HAS BETWEEN 40 AND 94 PERCENT GROUNDCOVER, OVER-SEED AND FERTILIZE USING HALF OF THE RATES ORIGINALLY SPECIFIED.
4. MAINTENANCE FERTILIZER RATES FOR PERMANENT SEEDING ARE SHOWN IN TABLE B.6.

STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION

PURPOSE

TO PROVIDE TIMELY VEGETATIVE COVER ON CUT AND FILL SLOPES AS WORK PROGRESSES.

CONDITIONS WHERE PRACTICE APPLIES

ANY CUT OR FILL SLOPE GREATER THAN 15 FEET IN HEIGHT. THIS PRACTICE ALSO APPLIES TO STOCKPILES.

CRITERIA

1. INCREMENTAL STABILIZATION – CUT SLOPES
   A. EXCAVATE AND STABILIZE CUT SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL CUT SLOPES AS THE WORK PROGRESSES.
   B. CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.1):
      a. CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO CONVEY RUNOFF AROUND THE EXCAVATION.
      b. PERFORM PHASE 1 EXCAVATION, PREPARE SEEDBED, AND STABILIZE.
      c. PERFORM PHASE 2 EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PHASE 1 AREAS AS NECESSARY.
      d. PERFORM FINAL PHASE EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS AS NECESSARY.

NOTE: ONCE EXCAVATION HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

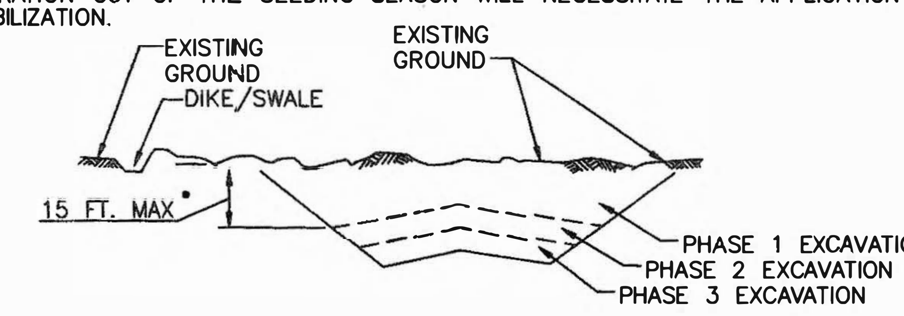


FIGURE B.1: INCREMENTAL STABILIZATION – CUT

1. INCREMENTAL STABILIZATION – FILL SLOPES
   A. CONSTRUCT AND STABILIZE FILL SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL SLOPES AS THE WORK PROGRESSES.
   B. STABILIZE SLOPES IMMEDIATELY WHEN THE VERTICAL HEIGHT OF A LIFT REACHES 15 FEET, OR WHEN THE GRADING OPERATION CEASES AS PRESCRIBED IN THE PLANS.
   C. AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.
   D. CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.2):
      a. CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO DIVERT RUNOFF AROUND THE FILL. CONSTRUCT SILT FENCE ON LOW SIDE OF FILL UNLESS OTHER METHODS SHOWN ON THE PLANS ADDRESS THIS AREA.
      b. AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.
      c. PLACE PHASE 1 FILL, PREPARE SEEDBED, AND STABILIZE.
      d. PLACE PHASE 2 FILL, PREPARE SEEDBED, AND STABILIZE.
      e. PLACE FINAL PHASE FILL, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS AS NECESSARY.

NOTE: ONCE THE PLACEMENT OF FILL HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

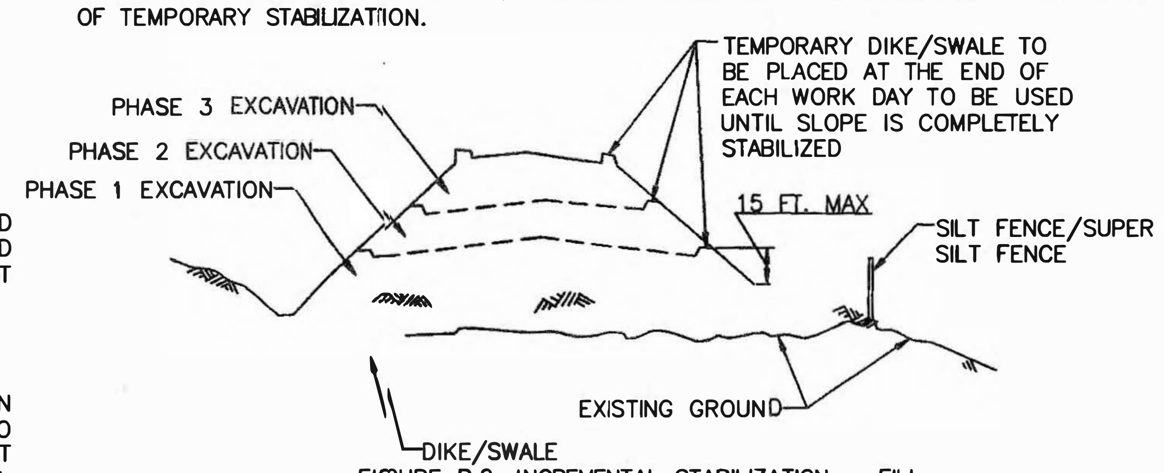


FIGURE B.2: INCREMENTAL STABILIZATION – FILL

STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES

WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA

1. SOIL PREPARATION
   A. TEMPORARY STABILIZATION
      a. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
      b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
      c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
2. PERMANENT STABILIZATION
   A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
      a. SOIL PH BETWEEN 6.0 AND 7.0.
      b. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
      c. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
      d. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
      e. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
   B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
   C. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
   D. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
   e. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.
2. TOPSOILING
   A. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
   B. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
   C. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
      a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
      e. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
      f. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
      g. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
   D. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
   E. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
      a. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER.
      b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
      c. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
   F. TOPSOIL APPLICATION
      a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
      b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
      c. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADINGAND SEEDBED PREPARATION.
3. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
   A. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
   B. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
   C. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
   D. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
   E. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE
   F. RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

CITY OF GAITHERSBURG
DEPARTMENT OF PUBLIC WORKS
FINAL APPROVAL
APPLICATION NO. AFP-7038-2013
DATE 07-09-15
BY [signature]

Michael D. Joe 7-9-15

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

KCI TECHNOLOGIES
ENGINEERS
PLANNERS
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11850 WEST MARKET PLACE
SUITE A
FULTON, MD 20759
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FAX: (410) 792-7419

REVISIONS			
NO.	DATE	DESCRIPTION	BY

DATE 07/01/2015
SCALE AS SHOWN
DESIGNED BY BEW
CHECK D BY THM

CITY OF GAITHERSBURG SALT STORAGE
800 RABBITT ROAD, GAITHERSBURG, MD 20878
TAX ID: 02018277

SEDIMENT & EROSION CONTROL DETAILS AND NOTES

CITY OF GAITHERSBURG ELECTION DISTRICT 09

DRAWING NO. C-1.02

SHEET 5 OF 6

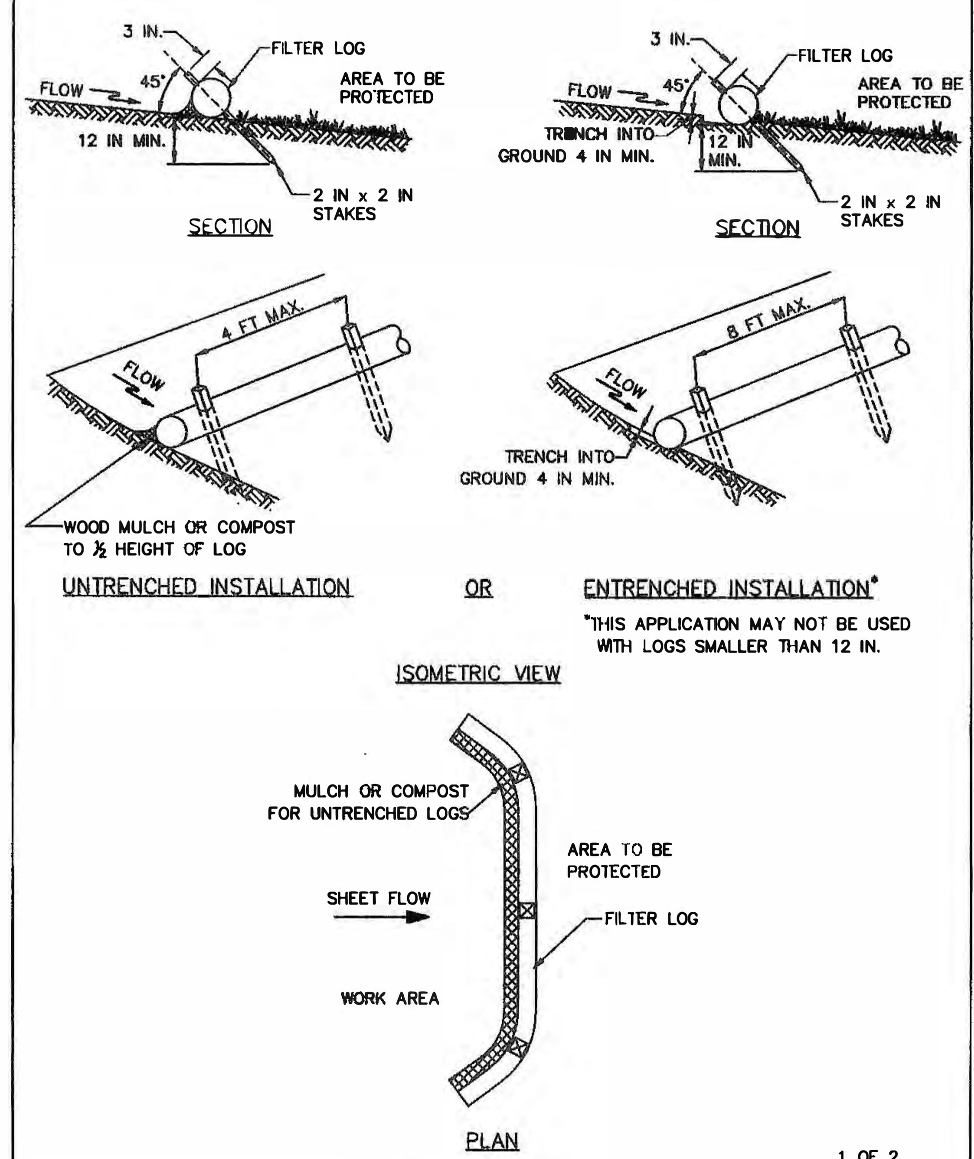
KCI JOB NUMBER 27157804

CITY OF GAITHERSBURG DEPARTMENT OF PUBLIC WORKS
STANDARD EROSION AND SEDIMENT CONTROL NOTES

1. THE PERMITTEE SHALL NOTIFY THE CITY INSPECTOR AT 301-258-6330, 48 HOURS BEFORE COMMENCING ANY LAND DISTURBING ACTIVITY AND SHALL BE REQUIRED TO HOLD A PRECONSTRUCTION MEETING BETWEEN HIMSELF OR HIS REPRESENTATIVE, AND AUTHORIZED REPRESENTATIVES OF THE CITY.
2. THE PERMITTEE MUST OBTAIN INSPECTION AND APPROVAL BY PLANNING AND CODE ENFORCEMENT AT THE FOLLOWING POINTS:
   A. AT THE REQUIRED PRE-CONSTRUCTION MEETING.
   B. FOLLOWING INSTALLATION OF SEDIMENT CONTROL MEASURES AND PRIOR TO ANY OTHER LAND DISTURBING ACTIVITY.
   C. DURING THE INSTALLATION OF A SEDIMENT BASIN OR STORMWATER MANAGEMENT STRUCTURE AT
   D. THE REQUIRED INSPECTION POINTS (SEE INSPECTION CHECKLIST ON PLAN). NOTIFICATION PRIOR TO COMMENCING CONSTRUCTION IS MANDATORY.
   E. PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL DEVICES.
   F. PRIOR TO FINAL ACCEPTANCE.
3. ALL EROSION CONTROL MEASURES ARE TO BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH APPLICABLE PUBLISHED STANDARDS AND SPECIFICATIONS AND THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL."
4. THE PERMITTEE SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE APPROVED PLAN AND CONSTRUCTION SEQUENCE, SHALL HAVE THEM INSPECTED AND APPROVED BY THE CITY INSPECTOR PRIOR TO BEGINNING ANY OTHER LAND DISTURBANCES, SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES, AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURES WITHOUT PRIOR PERMISSION FROM CITY INSPECTOR.
5. ANY REQUEST FOR CHANGES TO THE APPROVED SEDIMENT CONTROL PLAN OR SEQUENCE OF CONSTRUCTION MUST BE SUBMITTED TO THE SEDIMENT CONTROL INSPECTOR AND APPROVED BEFORE IMPLEMENTING CHANGES. MAJOR CHANGES WILL REQUIRE A PLAN REVISION.
6. THE PERMITTEE SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ONTO TRAVERSED PUBLIC THOROUGHFARE(S). ALL MATERIALS DEPOSITED ONTO PUBLIC THOROUGHFARE(S) SHALL BE REMOVED IMMEDIATELY.
7. THE PERMITTEE SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY IN EFFECTIVE OPERATING CONDITION ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIMES AS THEY ARE REMOVED WITH PRIOR PERMISSION FROM DEPARTMENT OF PLANNING AND CODE ENFORCEMENT.
8. ALL SEDIMENT BASINS, TRAP EMBANKMENTS, SWALES, PERIMETER DIKES AND PERMANENT SLOPES STEEPER OR EQUAL TO 3:1 SHALL BE STABILIZED WITH SOD, SEED AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES, WITHIN THREE (3) CALENDAR DAYS OF ESTABLISHMENT. ALL AREAS DISTURBED OUTSIDE OF THE PERIMETER SEDIMENT CONTROL SYSTEM MUST BE MINIMIZED AND STABILIZED IMMEDIATELY. MAINTENANCE MUST BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. RESTABILIZATION OR OVERSEEDING WILL BE REQUIRED, IF NECESSARY.
9. THE PERMITTEE SHALL APPLY SOD, SEED AND ANCHORED STRAW, MULCH, OR OTHER APPROVED STABILIZATION MEASURES TO ALL DISTURBED AREAS WITHIN 7 CALENDAR DAYS AFTER STRIPPING AND GRADING ACTIVITIES HAVE CEASED ON THAT AREA. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. ACTIVE CONSTRUCTION AREAS, SUCH AS BORROW OR STOCKPILE AREAS, ROADWAY IMPROVEMENTS, AND AREAS WITHIN 50 FEET OF A BUILDING UNDER CONSTRUCTION MAY BE EXEMPTED FROM THIS REQUIREMENT, PROVIDED THAT EROSION AND SEDIMENT CONTROL MEASURES ARE INSTALLED AND MAINTAINED TO PROTECT THOSE AREAS.
10. PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES, THE PERMITTEE SHALL STABILIZE ALL CONTRIBUTORY DISTURBED AREAS USING SOD OR AN APPROVED PERMANENT SEED MIXTURE WITH REQUIRED SOIL AMENDMENTS AND AN APPROVED ANCHORED MULCH. WOOD FIBER MULCH MAY ONLY BE USED IN SEEDING SEASON WHEN THE SLOPE DOES NOT EXCEED 10% TO PROMOTE SHEET FLOW DRAINAGE. AREAS BROUGHT TO FINISHED GRADE DURING THE SEEDING SEASON SHALL BE PERMANENTLY STABILIZED WITHIN 7 CALENDAR DAYS OF ESTABLISHMENT. WHEN PROPERTY IS BROUGHT TO FINISHED GRADE DURING THE MONTHS OF NOVEMBER THROUGH FEBRUARY, AND PERMANENT STABILIZATION IS FOUND TO BE IMPRACTICAL, AN APPROVED TEMPORARY SEED AND STRAW ANCHORED MULCH SHALL BE APPLIED TO DISTURBED AREAS. THE FINAL PERMANENT STABILIZATION OF SUCH PROPERTY SHALL BE COMPLETED PRIOR TO THE FOLLOWING APRIL 15.
11. THE SITE WORK, MATERIALS, APPROVED SC AND SWM PLANS AND ANY REQUIRED TEST REPORTS SHALL BE AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF THE CITY OF GAITHERSBURG.
12. SURFACE DRAINAGE FLOWS OVER UNSTABILIZED CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER PREVENTING DRAINAGE FLOWS FROM TRAVERSING THE SLOPES OR BY INSTALLING MECHANICAL DEVICES TO LOWER THE WATER DOWNSLOPE WITHOUT CAUSING EROSION. DIKES SHALL BE INSTALLED AND MAINTAINED AT THE TOP OF CUT OR FILL SLOPES UNTIL THE SLOPE AND DRAINAGE AREA TO IT ARE FULLY STABILIZED, AT WHICH TIME THEY MUST BE REMOVED AND FINAL GRADING DONE TO PROMOTE SHEET FLOW DRAINAGE. MECHANICAL DEVICES MUST BE PROVIDED AT POINTS OF CONCENTRATED FLOW WHERE EROSION IS LIKELY TO OCCUR.
13. PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITH SOD OR SEED WITH AN APPROVED EROSION CONTROL MATTING OR BY OTHER APPROVED STABILIZATION MEASURES.
14. TEMPORARY SEDIMENT CONTROL DEVICES SHALL BE REMOVED, WITH PERMISSION OF THE CITY INSPECTOR, WITHIN (30) CALENDAR DAYS FOLLOWING ESTABLISHMENT OF PERMANENT STABILIZATION IN ALL CONTRIBUTORY DRAINAGE AREAS. IF ESTABLISHMENT IS NOT FULL AND UNIFORM AS DETERMINED BY THE SEDIMENT CONTROL INSPECTOR, OVERSEEDING WILL BE REQUIRED. STORMWATER MANAGEMENT STRUCTURES USED TEMPORARILY FOR SEDIMENT CONTROL SHALL BE CONVERTED TO THE PERMANENT CONFIGURATION WITHIN THIS TIME PERIOD AS WELL.
15. NO PERMANENT CUT OR FILL SLOPE WITH A GRADIENT STEEPER THAN 3:1 WILL BE PERMITTED IN LAWN MAINTENANCE AREAS. A SLOPE GRADIENT OF UP TO 2:1 WILL BE PERMITTED IN AREAS THAT ARE NOT TO BE MAINTAINED PROVIDED THAT THOSE AREAS ARE INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN WITH A LOW-MAINTENANCE GROUND COVER SPECIFIED FOR PERMANENT STABILIZATION. SLOPE GRADIENT STEEPER THAN 2:1 WILL NOT BE PERMITTED WITH VEGETATIVE STABILIZATION.
16. THE PERMITTEE SHALL INSTALL A SPLASHBLOCK AT THE BOTTOM OF EACH DOWNSPOUT UNLESS THE DOWNSPOUT IS CONNECTED BY A DRAIN LINE TO AN ACCEPTABLE OUTLET.
17. ALL WATER PUMPED FROM EXCAVATION DURING CONSTRUCTION SHALL BE PUMPED EITHER TO SEDIMENT TANKS AND/OR SEDIMENT TRAPS. NO WATER WILL BE PUMPED TO THE STORM DRAIN SYSTEM. DEWATERING SHALL BE PERFORMED IN ACCORDANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
18. FOR FINISHED GRADING, THE PERMITTEE SHALL PROVIDE ADEQUATE GRADIENTS SO AS TO: (1) PREVENT WATER FROM STANDING ON THE SURFACE OF LAWNS MORE THAN 24 HOURS AFTER THE END OF A RAINFALL, EXCEPT IN DESIGNATED DRAINAGE COURSES AND SWALE FLOW AREAS WHICH MAY DRAIN AS LONG AS 48 HOURS AFTER THE END OF A RAINFALL, AND (2) PROVIDE POSITIVE DRAINAGE AWAY FROM ALL BUILDING FOUNDATIONS OR OPENINGS.
19. SEDIMENT TRAPS OR BASINS ARE NOT PERMITTED WITHIN 20 FEET OF A BUILDING WHICH IS EXISTING OR UNDER CONSTRUCTION. NO BUILDING MAY BE CONSTRUCTED WITHIN 20 FEET OF A SEDIMENT TRAP OR BASIN.
20. ALL INLETS IN NON-SUMP AREAS SHALL HAVE ASPHALT BERMS INSTALLED AT THE TIME OF BASE PAVING ESTABLISHMENT.
21. THE SEDIMENT CONTROL INSPECTOR HAS THE OPTION OF REQUIRING ADDITIONAL SEDIMENT CONTROL MEASURES, IF DEEMED NECESSARY.
22. ALL TRAP ELEVATIONS ARE RELATIVE TO THE OUTLET ELEVATION, WHICH MUST BE ON EXISTING UNDISTURBED GROUND.
23. VEGETATIVE STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
24. TEMPORARY SEDIMENT TRAP(S) SHALL BE CLEANED OUT AND RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO A POINT ONE HALF (1/2) THE DEPTH BETWEEN THE OUTLET CREST AND THE BOTTOM OF THE TRAP.
25. SEDIMENT REMOVED FROM TRAPS SHALL BE PLACED AND STABILIZED IN APPROVED AREAS IN SUCH A MANNER THAT IT DOES NOT FOUL EXISTING OR PROPOSED STORM DRAINAGE SYSTEMS OR AREAS ALREADY STABILIZED. SEDIMENT SHALL NOT BE PLACED WITHIN A FLOOD PLAIN OR WETLAND.
26. ALL SEDIMENT BASINS AND TRAPS MUST BE SURROUNDED WITH A WELDED WIRE SAFETY FENCE. THE FENCE MUST BE AT LEAST 42 INCHES HIGH, HAVE POSTS SPACED NO FARTHER APART THAN 8 FEET, HAVE MESH OPENINGS NO GREATER THAN 2 INCHES IN WIDTH AND 4 INCHES IN HEIGHT, WITH A MINIMUM OF 14-GAUGE WIRE. SAFETY FENCE MUST BE MAINTAINED IN GOOD CONDITION AT ALL TIMES.
27. NO EXCAVATION IN THE AREA OF EXISTING UTILITIES IS PERMITTED UNLESS THEIR LOCATION HAS BEEN DETERMINED. CALL MISS UTILITY AT 1-800-257-7777 48 HOURS PRIOR TO THE START OF WORK.
28. OFF-SITE SPOIL OR BORROW AREAS MUST HAVE APPROVED SC PLANS.
29. PROTECT ALL TREES TO BE PRESERVED DURING CONSTRUCTION IN ACCORDANCE WITH THE APPROVED FOREST CONSERVATION PLAN AND FOREST STAND DELINEATION.
30. PERMITTEE IS RESPONSIBLE FOR ALL ACTIONS OF SUBCONTRACTORS, INCLUDING REPAIRING DAMAGES OF SEDIMENT CONTROL DEVICES.

DETAIL E-6 FILTER LOG

STANDARD SYMBOL: ├── FL-18 ──┤
DESIGNATION FL-18 REFERS TO 18 INCH DIAMETER FILTER LOG.



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-6 FILTER LOG

STANDARD SYMBOL: ├── FL-18 ──┤
DESIGNATION FL-18 REFERS TO 18 INCH DIAMETER FILTER LOG.

CONSTRUCTION SPECIFICATIONS

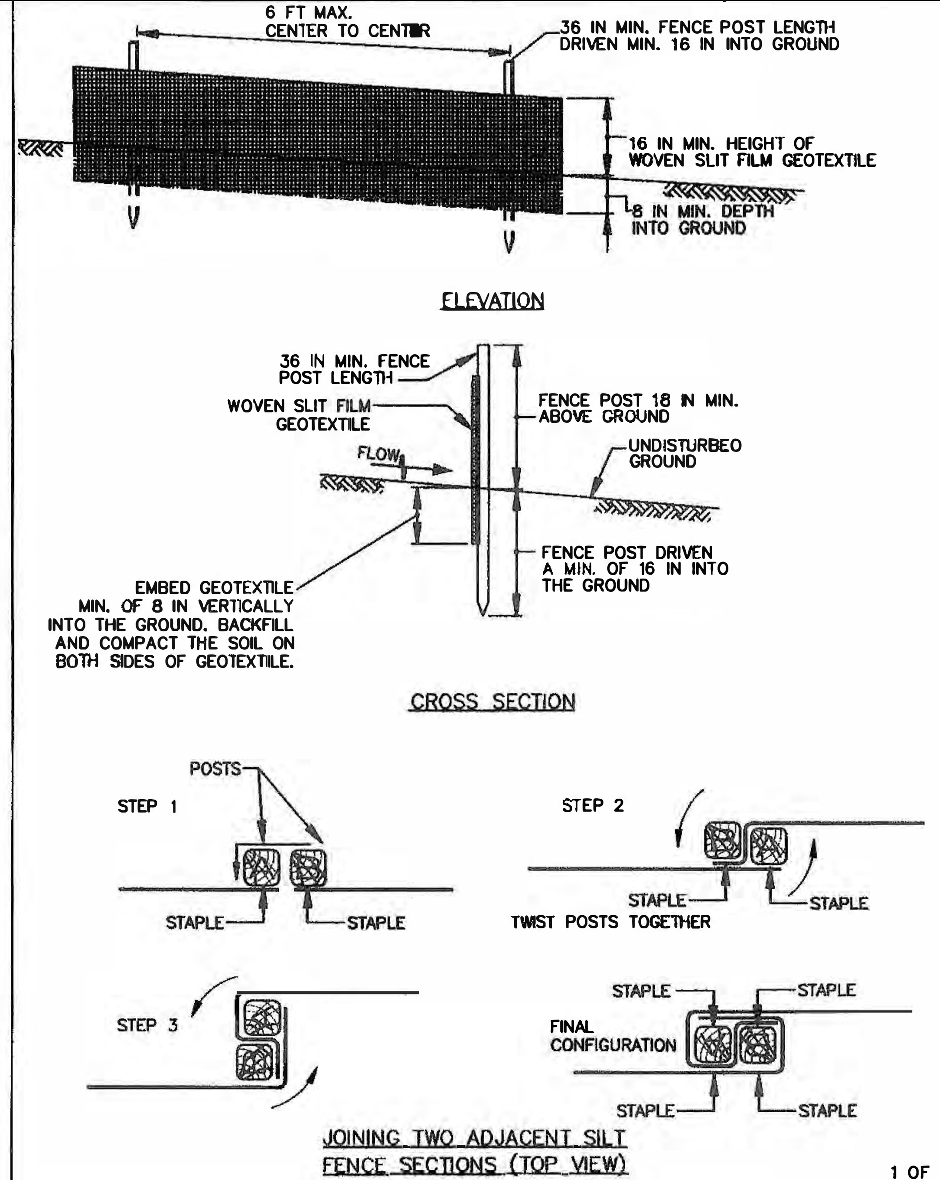
1. PRIOR TO INSTALLATION, CLEAR ALL OBSTRUCTIONS INCLUDING ROCKS, CLODS, AND DEBRIS GREATER THAN ONE INCH THAT MAY INTERFERE WITH PROPER FUNCTION OF FILTER LOG.
2. FILL LOG NETTING UNIFORMLY WITH COMPOST (IN ACCORDANCE WITH SECTION H-1 MATERIALS), OR OTHER APPROVED BIODEGRADABLE MATERIAL TO DESIRED LENGTH SUCH THAT LOGS DO NOT DEFORM.
3. INSTALL FILTER LOGS PERPENDICULAR TO THE FLOW DIRECTION AND PARALLEL TO THE SLOPE WITH THE BEGINNING AND END OF THE INSTALLATION POINTING SLIGHTLY UP THE SLOPE CREATING A "J" SHAPE AT EACH END TO PREVENT BYPASS.
4. FOR UNTRENCHED INSTALLATION BLOW OR HAND PLACE MULCH OR COMPOST ON UPHILL SIDE OF THE SLOPE ALONG LOG.
5. STAKE FILTER LOG EVERY 4 FEET OR CLOSER ALONG ENTIRE LENGTH OF LOG OR TRENCH LOG INTO GROUND A MINIMUM OF 4 INCHES AND STAKE LOG EVERY 8 FEET OR CLOSER.
6. USE STAKES WITH A MINIMUM NOMINAL CROSS SECTION OF 2X2 INCH AND OF SUFFICIENT LENGTH TO ATTAIN A MINIMUM OF 12 INCHES INTO THE GROUND AND 3 INCHES PROTRUDING ABOVE LOG.
7. WHEN MORE THAN ONE LOG IS NEEDED, OVERLAP ENDS 12 INCHES MINIMUM AND STAKE.
8. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO A DEPTH OF ½ THE EXPOSED HEIGHT OF LOG AND REPLACE MULCH. REPLACE FILTER LOG IF TORN. REINSTALL FILTER LOG IF UNDERMINING OR DISLODGING OCCURS. REPLACE CLOGGED FILTER LOGS. FOR PERMANENT APPLICATIONS, ESTABLISH AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: ├── SF ──┤



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

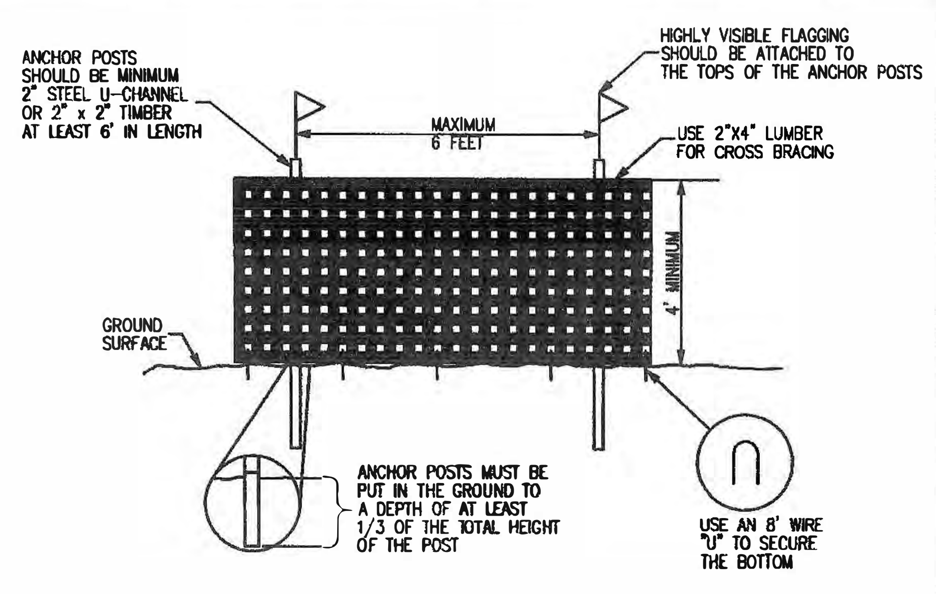
STANDARD SYMBOL: ├── SF ──┤

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± 1/16 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATEO SEDIMENT ANO DEBRIS WHEN BULGES OEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



GENERAL NOTES

1. Limits of disturbance will be set as part of the review process for an approved TCP.
2. The boundaries of the limits of disturbance should be staked or flagged prior to erecting the protection device.
3. Anchor posts should be placed to avoid severing or damaging large tree roots.
4. Fencing material shall be fastened securely to the anchor posts, cross bracing and ground.

BLAZE ORANGE TREE PROTECTION FENCE DETAIL

NOT TO SCALE

MAINTENANCE CERTIFICATION ON PRIVATE LANDS

I/WE HEREBY CERTIFY THAT I/WE ASSUME MAINTENANCE RESPONSIBILITIES FOR ALL STORMWATER MANAGEMENT STRUCTURES SHOWN HEREON. IF MAINTENANCE RESPONSIBILITY IS LEGALLY TRANSFERRED, I/WE AGREE TO SUPPLY THE CITY OF GAITHERSBURG WITH A COPY OF THE DOCUMENT (SIGNED BY BOTH PARTIES) TRANSFERRING SAID RESPONSIBILITY AT THE TIME.

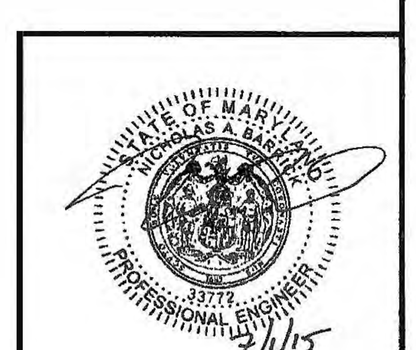
Michael D. Johnson — OWNER/DEVELOPER

7-9-15 — DATE

Michael D. JOHNSON - Director of Public Works — PRINTED NAME AND TITLE

CITY OF GAITHERSBURG
DEPARTMENT OF PUBLIC WORKS
FINAL APPROVAL
APPLICATION NO. AFP-7038-2013
DATE 07-09-15
BY [signature]

Michael D. Johnson 7-9-15



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REVISIONS			
NO.	DATE	DESCRIPTION	BY

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DESIGNED BY BEW
CHECKED BY THM

CITY OF GAITHERSBURG SALT STORAGE
800 RABBITT ROAD, GAITHERSBURG, MD 20878
TAX ID: 02018277

SEDIMENT & EROSION CONTROL DETAILS AND NOTES

CITY OF GAITHERSBURG — ELECTION DISTRICT 09

DRAWING NO. C-1.03
SHEET 6 OF 6
KCI JOB NUMBER 27157804

BRUCE E. WRIGHT
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