

LEGAL NOTICE

CITY OF NEW CARROLLTON

RFP-2016-01

Request for Proposals

Bicentennial Park Retaining Wall

The City of New Carrollton is seeking proposals from experienced contractors to remove and properly dispose of an existing concrete block retaining wall located at Bicentennial Park in the City and to design and construct a new retaining wall in its stead. The RFP may be obtained from the City's website (<http://www.newcarrolltonmd.gov>), from eMaryland Marketplace (<https://emaryland.buyspeed.com>), or in person from the City Clerk, New Carrollton City Hall, 6016 Princess Garden Parkway, New Carrollton, Maryland 20784 after 9:00 a.m. on September 6, 2016. Vendors are responsible to check the City's website for possible addenda, review, sign and include in your proposal submission.

There will be a mandatory pre-bid meeting held at 10a.m. on the 16th day of September, 2016 at 6318 Westbrook Dr. New Carrollton MD, 20784. **If a bidder fails to attend the pre-bid meeting he/she will not be permitted to submit a proposal or bid.**

Proposals will be received in the Office of the City Administrative Officer at New Carrollton City Hall, at the address noted above in a *sealed envelope* marked: "Bicentennial Park Retaining Wall Proposal" until **2:00 p.m. on October 6, 2016, at which time they will be publicly opened and read.** Please provide one original and one copy of the proposal on double-sided paper. Proposals shall be consistent with the scope of services contained in the Request for Proposals (RFP). The City reserves the right to reject any and all proposals and to reduce or modify the scope of services

All questions or requests for clarification regarding this RFP must be received, in writing, via e-mail at dbarber@newcarrolltonmd.gov by 2:00 p.m. on September 23, 2016. Answers will be posted to the City's website by September 30, 2016.

The City encourages all minority, women, and disadvantaged business owners to submit proposals.

PROPOSAL REQUIREMENTS

Proposals must provide the following information:

1. A list of personnel expected to perform the services requested.
2. A list of all firms who may be used as subcontractors for this project. Include information relating to the experience of each firm identified and three references for each firm identified, including any subcontractor(s) that may be used.
3. A detailed description of the firm's understanding of the project and proposed scope.
4. The cost of the proposal (please provide a per-task and total price).
5. A detailed timeline for completion of the various aspects of the scope of work.
6. Three references, with the name, postal mailing address, phone and fax numbers, and e-mail address of clients for which the company has provided similar services of a similar magnitude.
7. A summary of at least two similar projects undertaken with the name and contact information of the lead individual to contact for further information.

RESPONSE DEADLINE

All questions or requests for clarification regarding this RFP must be received, in writing, via e-mail at dbarber@newcarrolltonmd.gov by 2:00 p.m. on 23, September, 2016. Answers will be uploaded to the City's bid website by 5:00 p.m. by 30, September, 2016. Bidders are expected to retrieve answers from the City's website and include them as an appendix in the proposal.

Proposals are due at the Office of the City Administrative Officer, 6016 Princess Garden Pkwy, New Carrollton, Maryland 20784 by 2:00 p.m., October 6, 2016. Proposal envelopes should be sealed and marked "Bicentennial Park Retaining Wall Proposal."

PROJECT SCHEDULE

Questions Due:	<u>23</u> , September, 2016 2:00 p.m.
Receipt of Proposals:	<u>6</u> , October, 2016 2:00 p.m.
Award of Contract (Council meeting):	<u>19</u> , October, 2016
Expected Project Kick-off Meeting:	<u>24</u> , October, 2016
Project Completion:	<u>23</u> , December, 2016

SCHEDULE OF RATES

Proposed hourly rates shall be provided for each Job Classification involved in the project. Rates will be in effect for the term of the Contract.

EXECUTION OF CONTRACT

The successful bidder is expected to sign a contract in substantially the same form as that included in this RFP, with terms acceptable to the City.

PUBLIC ACCESS TO RESPONSES TO RFP

Procurement information, including responses to RFPs, shall be a public record to the extent provided in the Maryland Public Information Act, Md. Ann. Code, General Provisions Article, Title 4 “Public Information Act”, and shall be available to the public as provided in such statute. Should a bidder or offeror contend that their proposal or a portion thereof contains confidential information, they should clearly identify which portion of their proposal should be treated as confidential and state the reason why it is confidential citing to the applicable provision(s) of the Maryland Public Information Act and decisions interpreting the Act. Bidders or offerors shall not make blanket assertions that the entirety of their submission is confidential. The City reserves the right, within the parameters of the Act, to determine that an item does not meet the appropriate criteria to be considered a confidential item and will so inform the bidder or offeror in writing of its determination.

END OF THIS SECTION – RFP CONTINUES ON NEXT PAGE

INSTRUCTIONS TO BIDDERS

1. BIDS:

Instruction forms and specifications may be obtained in person or by mail at the Office of the City Administrative Officer, New Carrollton City Hall, 6016 Princess Garden Parkway, Maryland 20784. Sealed bids will only be accepted by the City if submitted in accordance with these instructions, the General Conditions and any other attached bid documents. A bid security in the amount of Five Percent (5%) of the bid amount in the form of a bid bond, bank draft, bank cashier's check or certified check made payable to the City of New Carrollton shall accompany this bid.

2. QUALIFICATIONS OF BIDDERS:

The City may make such investigation as it deems necessary to determine the ability of the Bidder to furnish the services and the Bidder shall furnish to the City all such information and data for this purpose that the City may request. The City reserves the right to reject any bid if the evidence submitted by the Bidder or an investigation of such Bidder fails to satisfy the City that such Bidder is properly qualified to carry out the obligations of the contract.

3. REQUIRED ATTACHMENTS TO BIDS:

Each bid shall be accompanied by the following which are attached herewith:

- a. Notarized affidavit (non-collusion oath) executed by the Bidder, or if the Bidder is a corporation, executed by a duly authorized representative of the corporation;
- b. Vendor responsibility form; and
- c. Equal Opportunity Employer form.

4. ACCEPTANCE OR REJECTION OF BIDS RESERVATIONS:

The City will accept or reject bids within sixty (60) days of the date set for opening bids. The City reserves the right to reject or accept any or all bids or portion thereof where such rejection or acceptance would, in the City's sole discretion, be in the best interest of the City, and further reserves the right to reduce or modify the scope of the Project in order to meet funding limits, budget and scheduling constraints.

5. NOTICE OF AWARD, SIGNING OF CONTRACT AND BONDS:

The successful Bidder agrees to sign a contract in substantially the form included in the Request for Proposals (except that certain additional provisions may be required of non-corporate

contractors pertaining to their status as sole proprietorships or partnerships and their workers' compensation coverage) binding it to the terms of this bid as set forth in the legal notice inviting proposals and the bid documents and any addenda thereto, within ten (10) days of notice of award. Failure of the Bidder to do so may result in the loss of its bid security and/or his award of bid.

6. BID WITHDRAWALS:

Prior to the time of opening, bids may be withdrawn only upon written request received from Bidder. No Bidder may withdraw its bid for a period of sixty (60) days after the opening of bids.

7. ADDENDA:

Any addenda issued after the invitation to bid and before the opening of bids shall be covered in the proposal, and in closing the contract they shall become a part thereof.

8. SPECIFICATIONS:

Bidders must examine the specifications carefully. In case doubt shall arise as to the meaning or intent of anything shown in the specifications, inquiry shall be made of the City before the proposal is submitted. The submission of a proposal shall indicate that the Bidder thoroughly understands the terms of the bid and the specifications.

GENERAL CONDITIONS

1. **RESERVATIONS:**

a. The City reserves the right to waive formalities or technicalities in bids as the interests of the City may require.

b. The City may waive minor differences in specifications provided these differences do not violate the intent of the specification or materially affect the operation for which the item is being acquired.

c. Bids which show omission, irregularity, alteration of forms, or additions not called for, and conditional or unconditional, unresponsive bids or bids obviously unbalanced may be rejected.

d. The City reserves the right to award contracts on a lump sum or an individual item basis or such combination thereof as the interests of the City may require.

e. The City reserves the right to purchase additional like units at the same unit cost.

f. If in the City's judgment, the City's best interest will be served by doing so, the City reserves the right to reject any and/or all bids; to accept a portion of a bid or bids only; to advertise for new proposals; to proceed to do the work otherwise; or to abandon the work.

2. **DISPUTES:**

In cases of disputes as to whether or not an item or service quoted or delivered meets the specifications, the decision of the City shall be final and binding on both parties.

3. **COMPLETION OF WORK:**

a. The Contractor shall complete the work that is the subject of the request for proposals as required by the terms of the request for proposals. If the Contractor is delayed at any time in the delivery of the products by any act or negligence of the City, or by any act or negligence by separate contractor employed by the City, or that of any employee of either, or by any changes ordered in the materials or by strike, lockout, fires, unusual delays in transportation, unavoidable casualties or any causes beyond the Contractor's control, or by delay authorized by the City, the City shall decide the permissible extent of such delay.

4. **FAILURE TO DELIVER:**

In the event the Contractor fails to deliver the services and materials covered by the Contract and in accordance with the delivery terms stipulated in the contract, then the City will have the right to purchase on the open market the services and/or materials covered in the Bid Proposal and shall have as damages the cost of obtaining such services and/or materials and any additional costs incurred by the City as a result thereof.

5. **INSURANCE:**

The Contractor shall maintain such commercial general liability and broad form property damage insurance and Workers' Compensation Insurance as will protect the City <http://www.newcarrolltonmd.gov/> from any and all Workers' Compensation claims and from any other claims for loss or damages or for general injury or damage to property which may arise from Contractor's operations under the contract, whether such operations be by itself or by any subcontractor or anyone directly or indirectly employed by either of them. Certificates of Insurance shall be on an occurrences basis. **The Contractor shall name the City as additional insured to the required insurance policy and will furnish a Certificate of Insurance or other acceptable evidence of insurance coverage to the City upon signing the contract.**

a. **Comprehensive Liability Insurance:** Limits of Coverage (Applies ONLY to Contractors performing services in and/or for the City; NOT for supply only Contracts) Limits of coverage for commercial general liability and broad form property damages coverage are to be no less than One Million Dollars (\$1,000,000.00) occurrence/One Million Dollars (\$1,000,000.00) aggregate personal injury and death and Two Hundred Fifty Thousand Dollars (\$250,000.00) property damage/ Five Hundred Thousand Dollars (\$500,000.00) aggregate, where insurance aggregates apply.

b. **Automobile Liability Insurance.** Motor vehicle insurance meeting the requirements of Maryland law and covering every vehicle and driver involved in providing the services, in the following amounts:

(1) Bodily injury liability with limits of \$500,000.00 each person and \$1,000,000.00 each accident;

(2) Property damage liability with a limit of \$100,000 each accident.

c. Professional liability insurance (errors and omission insurance) shall be required in the amount of one million dollars (\$1,000,000.00).

d. Workers' Compensation: Failure of the Contractor to maintain Worker's Compensation coverage for the duration of the contract will result in the City deducting from each payment made under this contract, to the Contractor, a pre-determined percentage to defray coverage costs of the City. Contractor shall comply with the requirements and benefits established by the State of Maryland for the provision of Workers' Compensation.

6. INDEMNIFICATION:

The Contractor will be required to indemnify, defend and hold the City harmless against any and all liability to any person or persons for or by any reason of any condition or malfunction of the materials used, and against any and all claims made or liability to any person or persons by reason of any act or omission or negligence of the Contractor or any of its agents, servants, or employees. This indemnification shall include reasonable fees incurred by the City in connection with such claim or liability.

7. TESTING AND INSPECTION:

The City has the right to inspect and test all services and materials called for by the contract, to the extent practicable at all times and places during the term of the contract. The City shall perform inspections and tests in a manner that will not unduly delay the work. If any of the services and/or materials do not conform to contract specifications, the City may require the Contractor to perform the service again or provide a replacement product in conformity with contract specifications, at no increase in contract amount.

8. PERFORMANCE AND PAYMENT BONDS:

The successful bidder shall be required to provide, at its expense, a performance bond in the amount of ____ % of the contract amount and a payment bond in the amount of _____ % of the contract amount to ensure the satisfactory completion of the work for which the contract is awarded. Both the performance and payment bonds shall be posted prior to any work commencing on the project.

AMERICANS WITH DISABILITIES ACT CERTIFICATION

1. The Americans with Disabilities Act (“ADA”) prohibits discrimination against qualified individuals with disabilities in all employment practices, including job application procedures, hiring, firing, advancement, compensation, training, and other terms, conditions, and privileges of employment. It applies to recruitment, advertising, tenure, layoff, leave, fringe benefits, and all other employment-related activities.

2. The City has published a statement to its employees that it does not discriminate in employment on the basis of any disability covered by the ADA and that such discrimination is prohibited in the City’s workplace. The City has also communicated to its employees the actions that may be taken against them for violation of this policy.

3. The Contractor is required to advise every employee of his or her rights under the ADA, including his or her right to be free from unlawful employment discrimination based on a covered disability.

4. It is further required of the Contractor that all employees working under this Contract, as a condition of employment under this Contract be advised, in writing, that they must abide by the terms of the ADA.

Bidder: _____ (Print Name of Firm)

Address: _____

City/State/Zip: _____

By: _____ (Signature of Person Authorized to Sign Bid)

_____ (Print Name and Title of Person Authorized to Sign Bid)

DRUG FREE WORKPLACE CERTIFICATION

1. The City has published a statement to its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the City's workplace. The City has also communicated to its employees the actions that will be taken against employees for violation of this policy.

2. Further, the City also informs employees of the dangers of drug abuse in the workplace; the City's policy of maintaining a drug free workplace; drug counseling, rehabilitation and employee assistance programs and the penalties that may be imposed upon employees for drug abuse violations occurring in the workplace.

3. The Contractor is required to give any employee to be engaged in the performance of this contract a copy of the statement that "the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the City's workplace".

4. It is further required of the Contractor that all employees working under this Contract, as a condition of employment under this Contract be advised, in writing, that they:
 - a. must abide by the terms of this statement; and
 - b. must notify their employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction.

5. The Contractor must notify the City in writing, within ten calendar days after receiving notice under subparagraph 4 (b) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant.

6. Contractor must take one of the following actions, within 30 calendar days of receiving notice under subparagraph 4 (b), with respect to any employee who is convicted of a criminal drug statute:

- a. Taking appropriate personnel action against such employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
- b. Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency.

7. Contractor must make a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs 1, 2, 3, 4, 5 and 6.

Bidder: _____ (Print Name of Firm)

Address: _____

City/State/Zip: _____

By: _____ (Signature of Person Authorized to Sign Bid)

_____ (Print Name and Title of Person Authorized to Sign Bid)

VENDOR RESPONSIBILITY FORM

1. Summarize briefly your experience in providing the commodities or service outlined in the attached request for proposals:

2. List the names and addresses of three (3) firms, *with telephone numbers, facsimile numbers, e-mail addresses and contact persons*, for which you have provided similar services:

3. List the name and address of one bank or other institution that can provide the City with an adequate credit reference:

Federal I.D. #

Name of Bidder: _____

Address: _____

Telephone #:

By: _____

Signature

Typed Name and Title

EQUAL OPPORTUNITY EMPLOYER

I hereby affirm that this company does not discriminate in any manner against any employee or applicant for employment because of race, creed, color, sex or national origin.

Bidder: _____
Type/Print Name of Firm

Address: _____

City/State/Zip: _____

By: _____
Signature of Person Authorized to Sign Bid

Type/Print Name and Title of Person
Authorized to Sign Bid

STATEMENT UNDER OATH TO ACCOMPANY BID

The bidder represents, and it is a condition of the acceptance of this bid, that the bidder has not been a party with other bidders to any agreement to bid a fixed or uniform price.

ATTEST/WITNESS

Name of Bidder-Type/Print

_____ By: _____
Signature of Person Authorized to Sign

Name and Title of Signatory (Type or Print)

STATE OF _____

COUNTY OF _____, TO WIT:

On this ____ day of _____ 20 ____, before the undersigned officer, personally appeared _____, known to me or satisfactorily proven to be the person whose name is subscribed on the foregoing instrument for the purposes therein contained. IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year aforesaid.

Notary Public

My Commission Expires: _____

INFORMATION ABOUT THE CONTRACT YOU WILL SIGN

What follows is a sample agreement that illustrates the type of contract agreement you will be asked to sign if yours is the successful proposal.

SAMPLE AGREEMENT

THIS AGREEMENT is entered into this _____ day of _____, 20____,
by the City of New Carrollton, a municipal corporation of the State of Maryland (“City”) and
_____ (“Contractor”) with offices at
_____.

In consideration of the mutual covenants and obligations contained herein, the sufficiency of which is hereby acknowledged, the City and the Contractor hereby agree as follows:

1. Services Provided: The Contractor shall provide the following services for the City:

_____ (“the Services”). The Services shall be provided as detailed in the Contract Documents listed below which are attached hereto as Appendix “A” and incorporated herein by reference:

- (1) Request for Proposal _____
- (2) Instructions to Bidders _____
- (3) General Conditions _____
- (4) ADA Certificate _____
- (5) Drug-Free Workplace Form _____
- (6) Vendor Responsibility Form _____
- (7) Equal Opportunity Employer Form _____
- (8) Statement Under Oath to Accompany Bid _____
- (9) Bid Proposal _____
- (10) Insurance Certificate _____
- (11) Notice of Award _____
- (12) Notice to Proceed (when issued) _____
- (13) Performance Bond _____

(14) Payment Bond

The Contractor agrees to accept the City’s schedule and budget. Contractor agrees to accept the City’s budget and to perform the work (by 23 December 2016 or within 60 days from date of Notice to Proceed). Contractor further acknowledges that the City retains the right to reduce the scope of the Services herein contracted for in order to accomplish the project within the City’s established budget and schedule.

It is understood by the parties hereto that time is of the essence in the completion of this contract.

The Contractor hereby agrees to furnish any and all equipment needed to perform the Services (the “Contractor’s Equipment”) except the following, which will be furnished by the City:_____.

2. Fees: The City hereby agrees to pay the Contractor as full consideration for the Contractor’s satisfactory performance of its obligations under this Agreement a sum not to exceed

(\$ _____) payable in the following manner: _____

Partial billings may be approved at the sole discretion of the City.

3. Binding Effect of Agreement: This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors and assigns.

4. Other Payments, Taxes, Expenses: Except as may be specifically agreed upon by the parties in writing, the Contractor shall be entitled to no fees, bonuses, contingent payments, or any other amount in connection with the services to be rendered or materials provided hereunder. The parties hereto further agree that the City shall have no obligation to reimburse, pay directly or otherwise satisfy any expenses of the Contractor in connection with the performance of his obligations under this Agreement, including, but not limited to, the cost of any insurance or license fees.

It is expressly understood and acknowledged by the parties hereto that the fees payable hereunder shall be paid in gross amount, without reduction for any Federal or State withholding or other payroll taxes, or any other governmental taxes or charges. The parties hereto further recognize that the Contractor is an independent contractor of the City and is therefore responsible

for directly assuming and remitting any applicable Federal or State withholding taxes, estimated tax payments, or any other fees, taxes or expenses whatsoever. In the event that the Contractor is deemed not to be an independent contractor by any local, state or federal government agency, the Contractor agrees to indemnify and hold harmless the City for any and all fees, costs and expenses, including but not limited to, attorneys' fees, incurred thereby.

5. INSURANCE: The Contractor covenants to maintain all applicable insurance in such amounts and form as are determined from time to time to be appropriate. The Contractor further agrees to provide evidence of such insurance upon signing this Agreement. The Certificates of Insurance shall be on an occurrences basis and shall either (a) provide that the City shall be given at least thirty (30) days prior written notice of the cancellation of, intention not to renew, or material change in the coverage or (b) provide that the City shall be given such notice of the cancellation of, intention not to renew, or material change in the coverage as is required by the terms of the Contractor's policy or policies of insurance, and provide copies of the relevant policies to the City with the Certificates. **All insurance shall include completed operations and contractual liability coverage, and must name the City as an additional insured, not just a certificate holder.**

PROVISION OF ANY INSURANCE REQUIRED HEREIN DOES NOT RELIEVE THE CONTRACTOR OF ANY OF THE RESPONSIBILITIES OR OBLIGATIONS ASSUMED BY THE CONTRACTOR IN THE CONTRACT AWARDED, OR FOR WHICH THE CONTRACTOR MAY BE LIABLE BY LAW OR OTHERWISE.

A. **Workers' Compensation Insurance:** Contractor shall comply with the requirements and benefits established by the State of Maryland for the provision of Workers' Compensation Insurance and must submit an insurance certificate as proof of coverage prior to contract approval. All Corporations are required to provide Workers' Compensation Certificates of Insurance.

B. **Comprehensive General Liability Insurance:** The Contractor shall provide general liability insurance in the following amounts and shall submit an insurance certificate as proof of coverage prior to contract approval:

1. **Personal injury liability** insurance with a limit of **\$1,000,000.00** for each occurrence and **\$1,000,000.00** aggregate, where insurance aggregates apply:

2. **Property damage liability** insurance with limits of **\$250,000.00** for each occurrence and **\$500,000.00** aggregate, where aggregates apply. Property damage insurance shall specifically include explosion, collapse and underground damage (X, C, U).

3. **Automobile Liability Insurance.** Motor vehicle insurance meeting the requirements of Maryland law and covering every vehicle and driver involved in providing the services, in the following amounts:

(a) Bodily injury liability with limits of \$500,000.00 each person and \$1,000,000.00 each accident;

(b) Property damage liability with a limit of \$100,000 each accident.

4. Professional liability insurance (errors and omission insurance) shall be required in the amount of one million dollars (\$1,000,000.00).

6. Doing Business in Maryland: Contractor warrants and represents that it (1) is either (a) incorporated in Maryland or (b) registered or qualified by the Maryland State Department of Assessments and Taxation (SDAT) as required by the Maryland Annotated Code, Corps. & Assocs. Article, to do business in Maryland and (2) is in good standing with SDAT.

7. Bonds: Performance and payment bonds are required as set forth in the Request for Proposals.

8. Compliance with Laws: The Contractor shall, without any additional expense to the City, be responsible for complying with any and all applicable laws, codes and regulations in connection with the services provided by the Contractor, including but not limited to obtaining any licenses required by the Contractor to perform the services herein contracted for.

9. Indemnification: The Contractor hereby acknowledges and agrees that the Contractor shall be responsible for and indemnify, defend and hold the City harmless against any and all claims for loss, personal injury and/or damage that may be suffered as a result of the Contractor's negligence or wilful misconduct in the Contractor's performance of the services herein contracted for or for any failure of the materials supplied under this contract or for any failure by the Contractor to perform the obligations of this Agreement, including but not limited to, attorneys' fees and any cost incurred by the City in defending any such claim. Contractor shall be responsible for and shall indemnify and hold the City harmless against any claim for loss, howsoever arising or incurred, for damage that may occur to Contractor's property or property of

third parties that is being stored at the construction site and/or maintained/used by the Contractor in delivery of the services the Contractor is providing.

10. Not Assignable: The Contractor shall not assign or transfer any interest or claim under this Agreement except as may be agreed upon and authorized in writing by the City and no contract shall be made by the Contractor with any other party for furnishing any of the services herein contracted for without the prior approval of the City.

11. Relief: In the event of a breach or a threatened breach by the Contractor of any provision of the Agreement, the Contractor recognizes the substantial and immediate harm that a breach or threatened breach will impose upon the City, and further recognizes that in such event monetary damages will be inadequate to fully protect the City. Accordingly, in the event of a breach or threatened breach of this Agreement, the Contractor consents to the City's entitlement to such ex parte, preliminary, interlocutory, temporary or permanent injunctive, or any other equitable relief, protecting and fully enforcing the City's rights hereunder and preventing the Contractor from further breaching any of his obligations set forth herein. The Contractor expressly waives any requirement based on any statute, rule of procedure, or other source, that the City post a bond as a condition of obtaining any of the above-described remedies. Nothing herein shall be construed as prohibiting the City from pursuing any other remedies available to the City at law or in equity for such breach or threatened breach, including the recovery of damages from the Contractor.

12. City's Right to Terminate: The services herein contracted for may be terminated immediately by the City upon written notice in whole or in part, when the City, in its sole and absolute discretion, determines such action to be in its best interests and shall be terminated whenever adequate funds have not been appropriated by the City Council in the annual budget for the purpose set forth herein. The Contractor is advised that the City does not guarantee the appropriation of funds for any subsequent fiscal year (beginning July 1). Upon such termination, the City shall be liable to the Contractor only for payment for services actually provided prior to the effective date of the termination.

13. Entire Understanding: This Agreement contains the entire understanding between the parties, and any additions or modifications hereto may only be made in writing, executed by both parties.

14. Applicable Law: This Agreement shall be interpreted in accordance with the laws of the State of Maryland. Any suit to enforce the terms hereof or for remedy for breach hereof shall be brought exclusively in the courts of the State of Maryland for Prince George’s County and the parties expressly consent to the jurisdiction thereof and waive any right that they may otherwise have to bring, transfer or remove such suit in or to the courts of any other jurisdiction.

15. Conflict of Interest: The person executing this Agreement on behalf of the Contractor certifies that he understands the provisions of the New Carrollton City Charter and Code dealing with conflicts of interest and the prohibition of the solicitation or acceptance of gifts.

16. Set-Off: In the event that the Contractor shall owe an obligation of any type whatsoever to the City at any time during the term hereof, or after the termination of the relationship created hereunder, the City shall have the right to offset any amount so owed the Contractor against any compensation due to Contractor for the provision of the Services.

17. Severability: If any term or provision of this Agreement shall be held invalid or unenforceable to any extent, the remainder of this Agreement shall not be affected thereby, and each term and provision of this Agreement shall be enforced to the fullest extent permitted by law.

18. Record Retention, Audits and Inspections: The Contractor shall:

A. Retain all financial and programmatic records for a period of three (3) years from the date of issuance of final payment hereunder.

B. Permit the City to have access to any and all records, including all subcontracts covered by this Agreement for the purpose of making audits, examinations, reproductions, excerpts, and transcripts. Access shall be available at any time during normal business hours and as often as deemed necessary by the City.

IN WITNESS WHEREOF, on the date hereinabove set forth, the parties hereto have executed this Agreement in two duplicate originals, any one of these shall be adequate proof of this Agreement without locating or accounting for the other.

WITNESS:

CONTRACTOR:

BY: _____
Signature of Person Authorized to Sign

Federal I.D. Number: _____

Telephone Number: _____

FAX Number: _____

Email: _____

WITNESS:

Doug Barber, City Clerk

Approved as to Form and Legal Sufficiency:

Date: _____

Typed Name/Title of Signatory

Full Name of Contractor

Address

City State Zip Code

CITY OF NEW CARROLLTON

BY: _____

Karen P. Ruff, City Attorney

END OF SAMPLE AGREEMENT

CITY OF NEW CARROLLTON

INVITATION TO BID

PUBLIC IMPROVEMENT PROJECTS

1. All references to “proposals” and “bids” shall mean the documents submitted by persons or entities in response to the Request for Proposals issued by the City of New Carrollton. All references to “bidder” shall mean the persons or entities that respond to the Request for Proposals issued by the City of New Carrollton.
2. Proposals must be on the attached forms, which shall be filled out completely stating the price for each item and shall be signed by the Bidder, with his full name and business address. Each proposal shall be enclosed in an opaque envelope and marked "**City of New Carrollton, Bicentennial Park Retaining Wall**". Proposals can be mailed to the City Clerk, City of New Carrollton, 6016 Princess Garden Parkway, New Carrollton, Maryland 20784.
3. A copy of the Project Description, Bid Forms, Project Location Maps, Site Photographs, and Prototype Elevation/Section/Construction Details and Specifications will be available between 8:30 AM and 4:30 PM from the City Clerk at the New Carrollton City Hall, 6016 Princess Garden Parkway, New Carrollton, Maryland.
4. Examination of Site and Data. Each Bidder shall examine the specifications carefully, and shall visit the site of the contemplated work, and shall familiarize himself thoroughly with all conditions of the contemplated work. *Each Bidder shall comply with the Project Description, included in the package of information provided by the Owner, see #3 above.* Should doubt arise regarding any meaning, intent or condition of the specifications or site, the Bidder shall make inquiry of the Engineer, in writing, before submitting his proposal. Submission of the proposal will indicate that the Bidder understands thoroughly the specifications and the condition at the site of the work.
5. A bid bond or certified check in the amount of 5% of the bid amount must accompany each bid and shall be payable to the City of New Carrollton. The certified check or bond of the Bidder to whom the Contract is awarded will be forfeited to the City as liquidated

damages in the case the Contract is not executed within ten (10) days after the receipt by the Bidder of the Contract for execution or upon Bidder's failure to furnish any required performance or payment bonds in connection with the contract awarded to him. Should the Bidder awarded the Contract fail to execute the Contract and Bond within the stipulated time, the award may be declared void and the Contract awarded to another responsible Bidder and such Bidder shall conform to the stipulations hereinbefore set forth as though he were the original party to whom the award was made or the City may reject any and/or all of the bids, for such reasons as they may deem proper.

6. The actual quantities built will be used as payment. We are also soliciting an Alternate price for 4 inch thick Concrete sidewalk which is not included in the Base Bid.

Base Bid

Remove and Replace _____ Feet of Retaining Wall _____ Lump Sum

Alternate # 1

Remove and Replace _____ Square Feet 4 in. Concrete Sidewalk _____ Lump Sum

BID OR PROPOSAL

TO: CITY OF NEW CARROLLTON

FOR: BICENTENNIAL PARK RETAINING WALL

The undersigned hereby declare that he/she has carefully examined the Request for Proposals in its entirety, as well as any and all addenda thereto issued by the City, including, but not limited to the proposed contract, the specifications, conditions and drawings forming a part of the contract, and have to his/her satisfaction examined the locality and site of the proposed work and agree to furnish all labor, materials, tools, machinery and other means of construction that may be necessary, and to do all the work as called for and in the manner provided for by the specifications and drawings and the contract, and the requirements under them of the Engineer, for the following prices, as set forth on the proposal sheets herewith.

Name

Signature

Date

Company

ITEM NO	EXACT QUANT	ITEMS AND UNIT PRICES BID	AMOUNT			
			DOLLARS	CENTS		
1	_____ Linear feet	<p>“Base Bid for All Work Associated With the Removal and Replacement of the Bicentennial Park Retaining Wall” at</p> <p>_____</p> <p>_____ LUMP SUM.</p>				
		TOTAL BASE BID	DOLLARS	CENTS		
ALT #1	_____ Square Feet	<p>“All Work Associated With Remove and Replace 4 inch thick Concrete Sidewalk” at</p> <p>_____</p> <p>_____ LUMP SUM.</p>				

PROJECT DESCRIPTION

The project consists of the complete replacement of an existing concrete block retaining wall at Bicentennial Park in New Carrollton, MD. The Park is located between 6215 and 6231 Westbrook Drive. The wall faces Westbrook immediately adjacent to a 5' wide concrete sidewalk. Replacement of the sidewalk is a bid alternate for the project.

The scope of the project includes:

- 1) demolition and removal of the existing retaining wall and the design and construction of a replacement wall at the exact location of the existing retaining wall using stacking units of the type specified in the attached specifications,
- 2) all geotechnical work necessary for the design of the wall replacement,
- 3) maintenance of automobile and pedestrian traffic flow on Westbrook during the entire project,
- 4) maintenance of pedestrian access to Carrollton Elementary School via the path through the park east of the retaining wall throughout the entire project,
- 5) maintenance of storm water flow to the drainage structure east of the wall,
- 6) removal, storage, and restoration of a wooden park identification sign ("Bicentennial Park & Garden, City of New Carrollton") to its existing location, and
- 7) removal, storage, and restoration of the sign planter and all existing plants and planting soil to its current location.

In addition, the removal and replacement of the existing 5' concrete sidewalk in its current location will be part of the scope of the project if the bidders' alternate bid is accepted.

The successful bidder will provide an engineering design of construction drawings and specifications, sealed by a professional structural engineer, for the retaining wall replacement and, if selected, for the sidewalk replacement. The successful bidder will submit the design drawings, plans, specifications and notes, and any other necessary construction documents, to the City for review and approval prior to the start of work. Prototype design drawings, plans, notes, and specifications are provided with this bid package as examples of construction drawings to be provided by the successful bidder, and as examples of design information to be considered. Those drawings, plans, notes and specifications are labeled 'Prototype'. The signed and sealed construction documents will be reviewed by the City's engineer, who will provide comments to the successful bidder. The successful bidder will address the comments and revise the drawings and other design documents.

The successful bidder will be responsible for the submittal of all drawings, plans, specifications, cost estimates, and any other documents required to any government agency with review and approval authority. The successful bidder will be required to obtain all necessary government review and/or permitting agency approvals or permits, and post all required bonds or letters of

credit. The successful bidder must conform to all required laws and ordinances governing and regulating the construction activities. The successful bidder will be required to establish limits of work by which the work will not encroach on adjacent or nearby private properties.

Measurement of the existing retaining wall and concrete sidewalk shall be the responsibility of the bidders. Each Bidder shall measure the entire retaining wall to be replaced, and shall replace it entirely to its exact current dimensions. Each Bidder shall measure the entire sidewalk in front of the wall from its intersection with the park western property line to its intersection with the park eastern property line, and shall replace it entirely to its exact current dimensions. Each bidder shall report the exact dimensions of the wall and the sidewalk to be replaced on the bid forms provided. The amount of the contract, which will be a not to exceed figure, will be based upon these measurements.

The successful bidder will replace and/or repair any damaged or destroyed - by construction activities - improvements which are not scheduled for removal. These include but are not limited to: grades of lawns and planted areas, landscape plants, planters, planting soil, turf grass, drainage structures, bollards, chains, concrete surfaces, curbs, gutters, ramps, pedestrian paths, signs, lighting, utilities, pavement, or pavement paint or striping.

Prototype specifications and elevation, section, detail, and design drawings are provided in the bid package for the bidders' convenience. The prototypes have been developed with this project in mind, and can serve as guidance for the wall and sidewalk replacements, but are not City approved design documents.

Section 02834 (32 32 23)

CONCRETE BLOCK RETAINING WALL

PART 1: GENERAL

1.01 Description

- A. Work shall consist of designing, furnishing and construction of a retaining block wall using blocks like or similar to KEYSTONE Compac Unit III, Desert Sand Color, Retaining Wall System in accordance with these specifications and in reasonably close conformity with the lines, grades, design, and dimensions shown on the Owner provided plans and details, and to the lines and grades shown on the construction drawings provided by the Contractor. No alternate wall systems will be considered, such as poured concrete.
- B. Work includes preparing foundation soil (foundation soils definition: soils under leveling pad and under reinforced geogrid zone), furnishing and installing leveling pad, unit drainage fill and backfill to the lines and grades shown on the Owner provided plans and details, and to the lines and grades shown on the construction drawings provided by the Contractor.
- C. Work includes furnishing and installing geogrid soil reinforcement of the type, size, location, and lengths designated on the Owner provided plans and details, and to the lines and grades shown on the construction drawings provided by the Contractor.

1.02 Related Sections

- A. Section 02300 (31 00 00) - Earthwork

1.03 Reference Documents

- A. American Society for Testing and Materials (ASTM)
 - 1. ASTM C140 Sampling and Testing Concrete Masonry Units
 - 2. ASTM C1372 Specification for Dry-Cast Segmental Retaining Wall Units
 - 3. ASTM D422 Particle-Size Analysis of Soils
 - 4. ASTM D698 Laboratory Compaction Characteristics of Soil -Standard Effort
 - 5. ASTM D1557 Laboratory Compaction Characteristics of Soil -Modified Effort
 - 6. ASTM D3034 Polyvinyl Chloride Pipe (PVC)
 - 7. ASTM D4318 Liquid Limit, Plastic Limit and Plasticity Index of Soils
 - 8. ASTM D4475 Horizontal Shear Strength of Pultruded Reinforced Plastic Rods
 - 9. ASTM D4476 Flexural Properties of Fiber Reinforced Pultruded Plastic Rods
 - 10. ASTM D4595 Tensile Properties of Geotextiles - Wide Width Strip
 - 11. ASTM D5262 Unconfined Tension Creep Behavior of Geosynthetics
 - 12. ASTM D5818 Evaluate Installation Damage of Geosynthetics
 - 13. ASTM D6637 Tensile Properties of Geogrids – Single or Multi-Rib
 - 14. ASTM D6638 Connection Strength - Reinforcement/Segmental Units
 - 15. ASTM D6706 Geosynthetic Pullout Resistance in Soil
 - 16. ASTM D6916 Shear Strength Between Segmental Concrete Units
- B. American Association of State Highway and Transportation Officials (AASHTO)
 - 1. AASHTO M 252 Corrugated Polyethylene Drainage Pipe
- C. Geosynthetic Research Institute (GRI)
 - 1. GRI-GG4 Determination of Long Term Design Strength of Geogrids
 - 2. GRI-GG5 Determination of Geogrid (soil) Pullout
- D. National Concrete Masonry Association (NCMA)
 - 1. NCMA SRWU-1 Test Method for Determining Connection Strength of SRW
 - 2. NCMA SRWU-2 Test Method for Determining Shear Strength of SRW

1.04 Submittals/Certification

- A. Contractor shall submit a Manufacturer's certification, prior to start of work, that the retaining wall system components meet the requirements of this specification and the structure design as provided by the manufacturer.
- B. Contractor shall submit plan and detail construction drawings and design calculations for the retaining wall system prepared and stamped by a Professional Engineer registered in the state of the project. The engineering designs, techniques, and material evaluations shall be in accordance with a wall design manual like or similar to the Keystone Design Manual, and should be consistent with the details and plans provided by the Owner.

1.05 Quality Assurance

- A. Contractor shall submit a list of five (5) previously constructed projects of similar size and magnitude by the wall installer where the specific retaining wall system has been

constructed successfully. Contact names and telephone numbers shall be listed for each project.

- B. Contractor shall provide evidence that the design engineer has a minimum of five years of documental experience in the design for reinforced soil structures. The design engineer shall provide proof of current professional liability insurance with an aggregate coverage limit of not less than \$2,000,000.
- C. Owner shall provide soil testing and quality assurance inspection during earthwork and wall construction operations. Contractor shall provide any quality control testing or inspection not provided by the Owner. Owner's quality assurance program does not relieve the contractor of responsibility for quality control and wall performance.

1.06 Delivery, Storage and Handling

- A. Contractor shall check all materials upon delivery to assure that the proper type, grade, color, and certification have been received.
- B. Contractor shall protect all materials from damage due to jobsite conditions and in accordance with manufacturer's recommendations. Damaged materials shall not be incorporated into the work.

PART 2: PRODUCTS

2.01 Definitions

- A. Retaining Wall Block Unit - a concrete retaining wall element machine made from Portland cement, water, and aggregates.
- B. Structural Geogrid - a structural element formed by a regular network of integrally connected tensile elements with apertures of sufficient size to allow interlocking with surrounding soil, rock, or earth and function primarily as reinforcement.
- C. Unit Drainage Fill - drainage aggregate that is placed within and immediately behind the retaining wall concrete units.
- D. Reinforced Backfill - compacted soil that is placed within the reinforced soil volume as outlined on the plans.

2.02 Concrete Block Retaining Wall Units

- A. Concrete block units shall be like or similar to 12" deep Keystone Compac III blocks that conform to the following architectural requirements:
 - 1. Face color – like or similar to Keystone Desert Sand.
 - 2. Face finish – straight split face.
 - 3. Bond configuration - running with bonds nominally located at midpoint vertically adjacent units, in both straight and curved alignments.
 - 4. Exposed surfaces of units shall be free of chips, cracks or other imperfections when viewed from a distance of 20 feet under diffused lighting.
- B. Concrete block materials shall conform to the requirements of ASTM C1372 - Standard Specifications for Segmental Retaining Wall Units.

C. Concrete block units shall conform to the following structural and geometric requirements measured in accordance with ASTM C140 Sampling and Testing Concrete Masonry Units:

1. Compressive strength: ≥ 3000 psi (21 MPa);
2. Absorption: $\leq 8\%$ (6% in northern states) for standard weight aggregates;
3. Dimensional tolerances: $\pm 1/8$ " (3 mm) from nominal unit dimensions not including rough split face, $\pm 1/16$ " (1.5 mm) unit height - top and bottom planes;
4. Unit size: 8" (203 mm) (H) x 18" (457 mm)(W) x 12" (304 mm)(D) minimum;
5. Unit weight: 75-lbs/unit (35 kg/unit) minimum for standard weight aggregates.

D. Concrete block units shall conform to the following performance testing:

1. Inter-unit shear strength in accordance with ASTM D6916 (NCMA SRWU-2): 600-plf (8 kN/m) minimum at 2-psi (13 kPa) normal pressure;
2. Geogrid/unit peak connection strength in accordance with ASTM D6638 (NCMA SRWU-1): 500-plf (7 kN/m) minimum at 2-psi (13 kPa) normal force.

E. Concrete block units shall conform to the following constructability requirements:

1. Near vertical setback (front pin position): $1/8$ " (3 mm) \pm per course;
2. Alignment and grid positioning mechanism - fiberglass pins, two per unit minimum;
3. Maximum horizontal gap between erected units shall be $\leq 1/2$ inch (13 mm).

2.03 Shear Connectors

A. Shear connectors shall be 1/2-inch (12 mm) diameter thermoset isophthalic polyester resin-pultruded fiberglass reinforcement rods to provide connection between vertically and horizontally adjacent units with the following requirements:

1. Flexural Strength in accordance with ASTM D4476: 128,000 psi (882 MPa) minimum;
2. Short Beam Shear in accordance with ASTM D4475: 6,400 psi (44 MPa) minimum.

B. Shear connectors shall be capable of holding the geogrid in the proper design position during grid pre-tensioning and backfilling.

2.04 Base Leveling Pad Material

A. Material shall consist of a compacted crushed stone (CR6 or #57) base or non-reinforced concrete as shown on the construction drawings.

2.05 Unit Drainage Fill

A. Unit drainage fill shall consist of clean 1" (25 mm) minus crushed stone or crushed gravel meeting the following gradation tested in accordance with ASTM D-422:

<u>Sieve Size</u>	<u>Percent Passing</u>
1 inch (25 mm)	100

3/4-inch (19 mm)	75-100
No. 4 (4.75mm)	0 - 10
No. 50 (300um)	0 - 5

- B. Drainage fill shall be placed within the cores of, between, and behind the units as indicated on the design drawings. Not less than one cubic foot (0.028 m³), of drainage fill shall be used for each square foot (0.093 m²) of wall face unless otherwise specified.

2.06 Reinforced (Backfill) Soil

- A. Reinforced (backfill) soil shall be free of debris and meet the following gradation tested in accordance with ASTM D-422:

<u>Sieve Size</u>	<u>Percent Passing</u>
2 inch (50 mm)	100
3/4-inch (19 mm)	100-75
No. 40 (425um)	0-60
No. 200 (75um)	0-35

Plasticity Index (PI) <15 and Liquid Limit <40 per ASTM D-4318.

- B. The maximum aggregate size shall be limited to 3/4 inch (19 mm) unless field tests have been performed to evaluate potential strength reductions to the geogrid design due to damage during construction.
- C. Material can be site-excavated soils where the above requirements can be met. Unsuitable soils for backfill (high plastic clays or organic soils) shall not be used in the backfill or in the reinforced soil mass.
- D. Contractor shall submit reinforced fill sample and laboratory test results to the Architect/Engineer for approval prior to the use of any proposed reinforced fill material.

2.07 Geogrid Depth (Soil Reinforcement)

- A. Geosynthetic depth (reinforcement) shall consist of geogrids manufactured specifically for soil reinforcement applications and shall be manufactured from high tenacity polyester yarn or high density polyethylene. Polyester geogrid shall be knitted from high tenacity polyester filament yarn with a molecular weight exceeding 25,000 g/m and a carboxyl end group values less than 30. Polyester geogrid shall be coated with an impregnated PVC coating that resists peeling, cracking, and stripping.
- B. Ta, Long Term Allowable Tensile Design Load, of the geogrid material shall be determined as follows:

$$T_a = T_{ult} / (R_{Fcr} * R_{Fd} * R_{Fid} * F_S)$$

Ta shall be evaluated based on a 75-year design life.

1. Tult, Short Term Ultimate Tensile Strength shall be determined in accordance with ASTM D4595 or ASTM D6637.
Tult is based on the minimum average roll values (MARV).
2. RFcr, Reduction Factor for Long Term Tension Creep

RF_{cr} shall be determined from 10,000-hour creep testing performed in accordance with ASTM D5262. Reduction value = 1.45 minimum.

3. RF_d, Reduction Factor for Durability
RF_d shall be determined from polymer specific durability testing covering the range of expected soil environments. RF_d = 1.10 minimum.
 4. RF_{id}, Reduction Factor for Installation Damage
RF_{id} shall be determined from product specific construction damage testing performed in accordance with ASTM D5818 (GRI-GG4). Test results shall be provided for each product to be used with project specific or more severe soil type. RF_{id} = 1.05 minimum.
 5. FS, Overall Design Factor of Safety
FS shall be 1.5 unless otherwise noted for the maximum allowable working stress calculation.
- C. The maximum design tensile load of the geogrid shall not exceed the laboratory tested ultimate strength of the geogrid/facing unit connection divided by a factor of safety of 1.5. The connection strength testing and computation procedures shall be in accordance with ASTM D6638 Connection Strength between Geosynthetic Reinforcement and Segmental Concrete Units (NCMA SRWU-1).
- D. Soil Interaction Coefficient, C_i
C_i values shall be determined per ASTM D6706 (GRI:GG5) at a maximum 0.75-inch (19 mm) displacement.
- E. Manufacturing Quality Control
The geogrid manufacturer shall have a manufacturing quality control program that includes QC testing by an independent laboratory.
The QC testing shall include:
 Tensile Strength Testing
 Melt Flow Index (HDPE)
 Molecular Weight (Polyester)

2.08 Drainage Pipe

- A. Drainage pipe shall be perforated or slotted PVC pipe manufactured in accordance with ASTM D-3034 or corrugated HDPE pipe manufactured in accordance with AASHTO M252.

2.09 Geotextile Filter Fabric

- A. When required, Geotextile filter fabric shall be 4.0 oz/sy, polypropylene, needlepunched nonwoven fabric.

PART 3: EXECUTION

3.01 Excavation

- A. Contractor shall excavate to the lines and grades shown on the construction drawings. Owner's representative shall inspect the excavation and approve prior to placement of

leveling material or fill soils. Proof roll foundation area as directed to determine if remedial work is required.

- B. Over-excavation and replacement of unsuitable foundation soils and replacement with approved compacted fill will be compensated as agreed upon with the Owner.

3.02 Base Leveling Pad

- A. Leveling pad material shall be placed to the lines and grades shown on the construction drawings, to a minimum thickness of 6 inches (150 mm) and extend laterally a minimum of 6" (150 mm) in front and behind the Keystone wall unit.
- B. Soil leveling pad materials shall be compacted to a minimum of 95 % Standard Proctor density per ASTM D-698 or 92% Modified Proctor Density per ASTM D1557.
- C. Leveling pad shall be prepared to insure full contact to the base surface of the concrete units.

3.03 Retaining Wall Block Unit Installation

- A. First course of units shall be placed on the leveling pad at the appropriate line and grade. Alignment and level shall be checked in all directions and insure that all units are in full contact with the base and properly seated.
- B. Place the front of units side-by-side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance with manufacturer's recommendations.
- C. Install shear/connecting devices per manufacturer's recommendations.
- D. Place and compact drainage fill within and behind wall units. Place and compact backfill soil behind drainage fill. Follow wall erection and drainage fill closely with structure backfill.
- E. Maximum stacked vertical height of wall units, prior to unit drainage fill and backfill placement and compaction, shall not exceed two courses.

3.04 Structural Geogrid Installation

- A. Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment.
- B. Geogrid reinforcement shall be placed at the strengths, lengths, and elevations shown on the construction design drawings or as directed by the Engineer.
- C. The geogrid shall be laid horizontally on compacted backfill and attached to the Keystone wall units. Place the next course of concrete block units over the geogrid. The geogrid shall be pulled taut, and anchored prior to backfill placement on the geogrid.
- D. Geogrid reinforcements shall be continuous throughout their embedment lengths and placed side-by-side to provide 100% coverage at each level. Spliced connections between shorter pieces of geogrid or gaps between adjacent pieces of geogrid are not permitted.

3.05 Reinforced Backfill Placement

- A. Reinforced backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack in the geogrid and installation damage.
- B. Reinforced backfill shall be placed and compacted in lifts not to exceed 6 inches (150 mm) where hand compaction is used, or 8 - 10 inches (200 to 250 mm) where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required density as required.
- C. Reinforced backfill shall be compacted to a minimum of 95 % Standard Proctor density per ASTM D-698 or 92% Modified Proctor Density per ASTM D1557. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be dry of optimum, + 0%, - 3%.
- D. Only lightweight hand-operated equipment shall be allowed within 3 feet (1 m) from the tail of the concrete block unit.
- E. Tracked construction equipment shall not be operated directly upon the geogrid reinforcement. A minimum fill thickness of 6 inches (150 mm) is required prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.
- F. Rubber tired equipment may pass over geogrid reinforcement at slow speeds, less than 10 MPH (15 KPH). Sudden braking and sharp turning shall be avoided.
- G. At the end of each day's operation, the Contractor shall slope the last lift of reinforced backfill away from the wall units to direct runoff away from wall face. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

3.06 Cap Installation

- A. Cap units shall be glued to underlying units with an all-weather adhesive recommended by the manufacturer such as that like or similar to Keystone Kapseal.

3.07 As-built Construction Tolerances

- A. Vertical alignment: ± 1.5 " (40 mm) over any 10' (3 m) distance.
- B. Wall Batter: within 2 degrees of design batter for rear pin position. For front pin position (near vertical batter) the wall may be vertical but cannot lean forward.
- C. Horizontal alignment: ± 1.5 " (40 mm) over any 10' (3 m) distance.
Corners, bends & curves: ± 1 foot (300 mm) to theoretical location.
- D. Maximum horizontal gap between erected units shall be $\leq 1/2$ inch (13 mm).

3.08 Field Quality Control

- A. Quality Assurance - The Owner shall/may engage inspection and testing services, including independent laboratories, to provide quality assurance and testing services during construction. This does not relieve the Contractor from securing the necessary construction quality control testing.

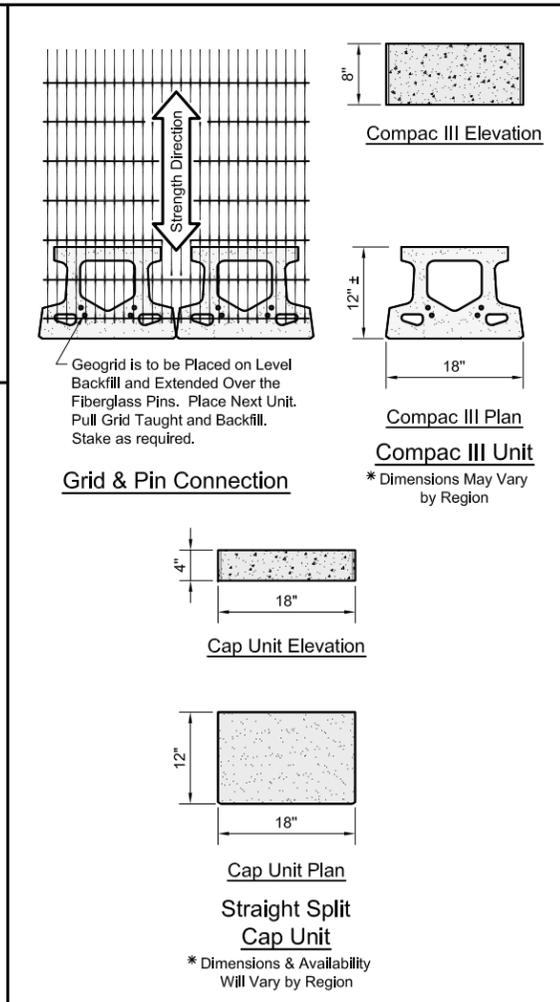
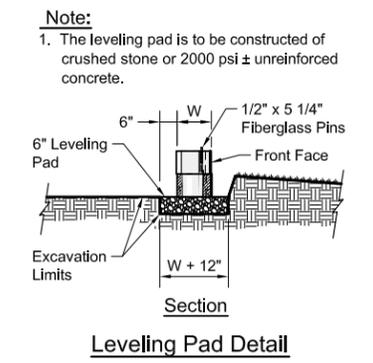
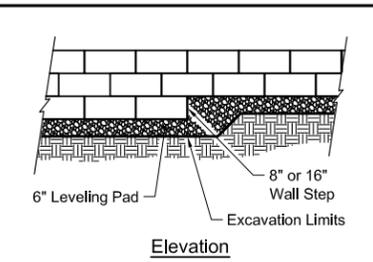
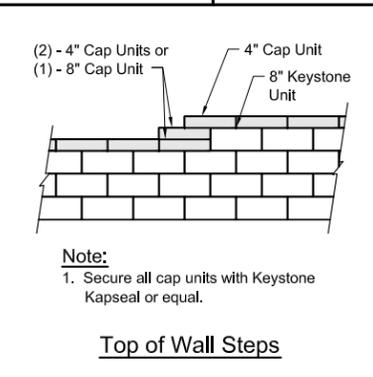
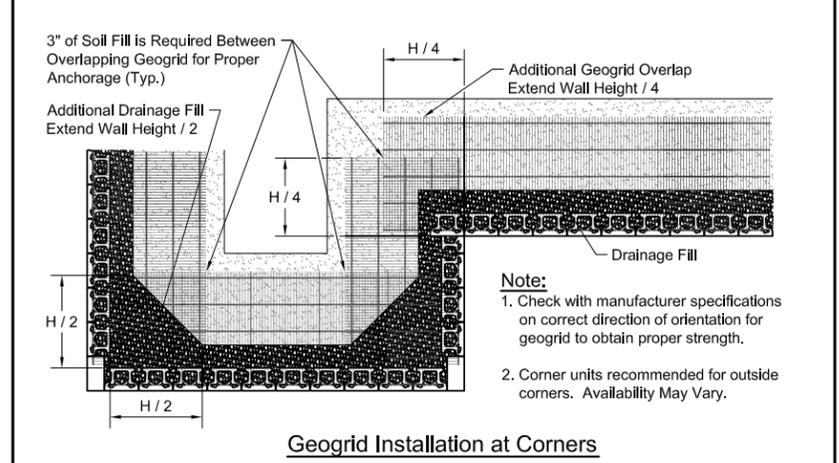
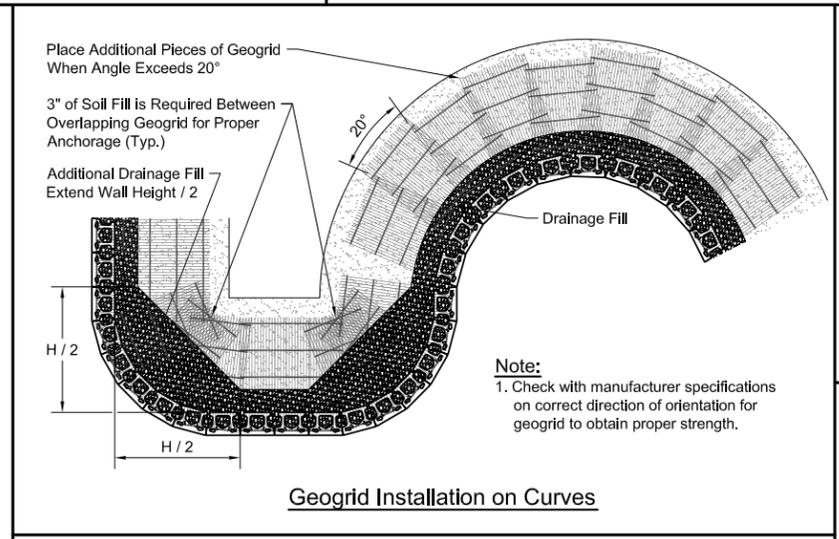
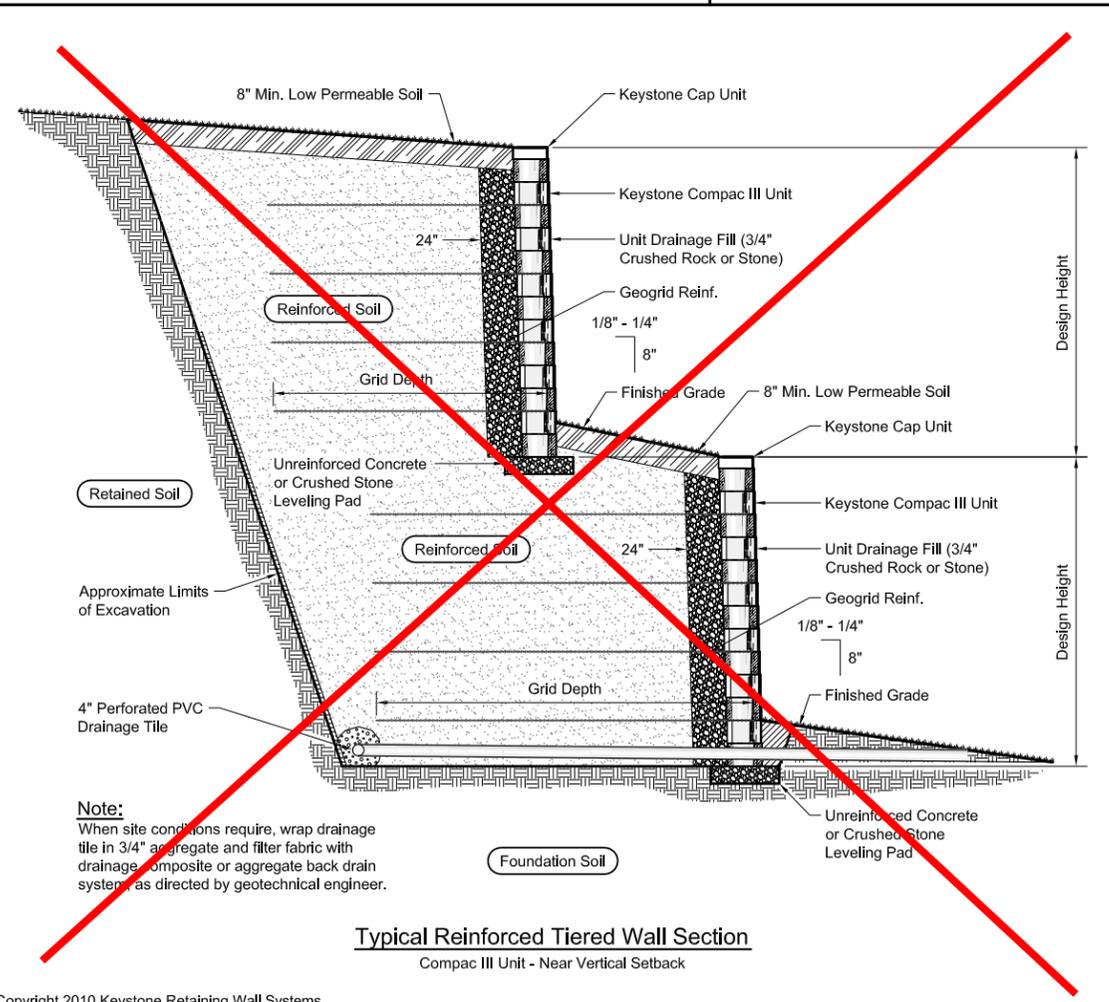
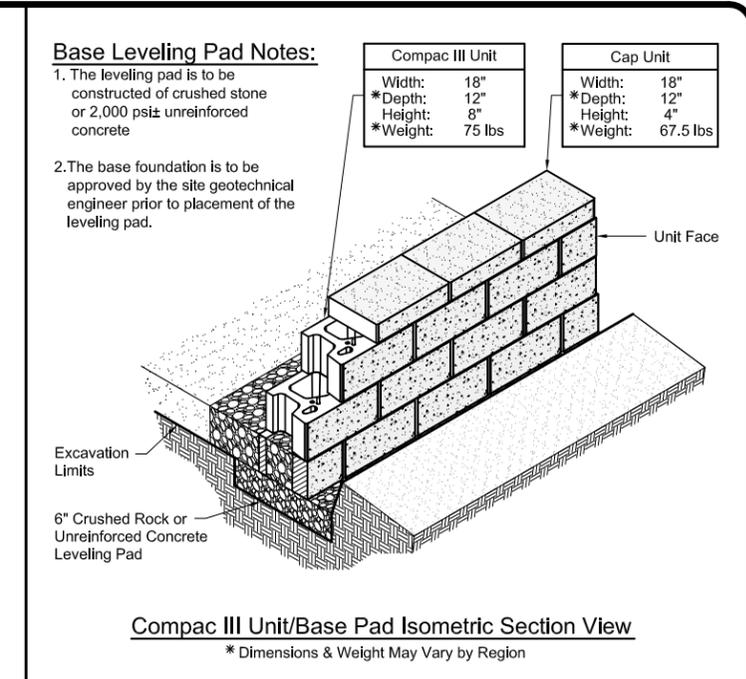
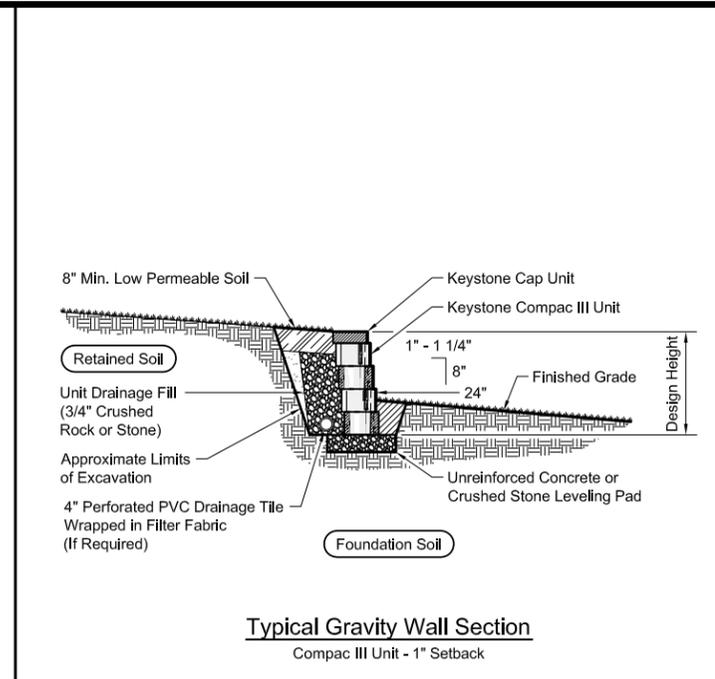
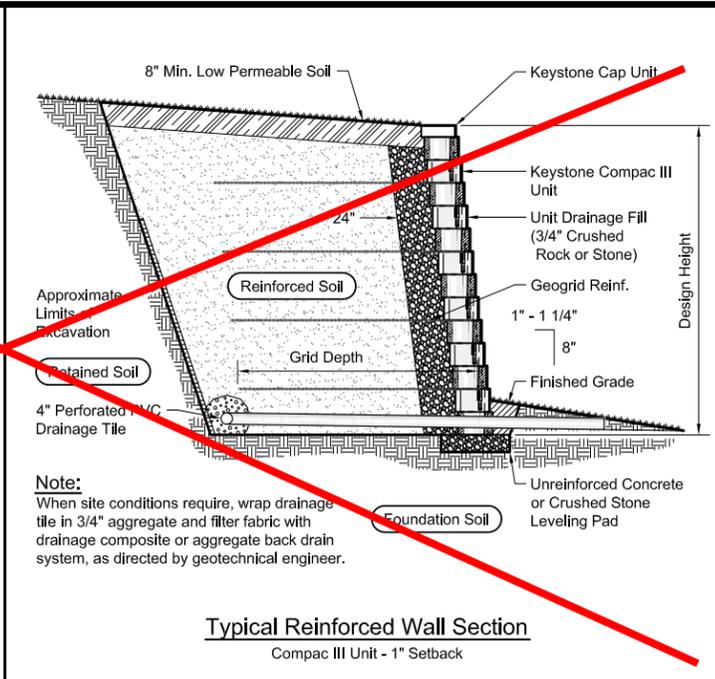
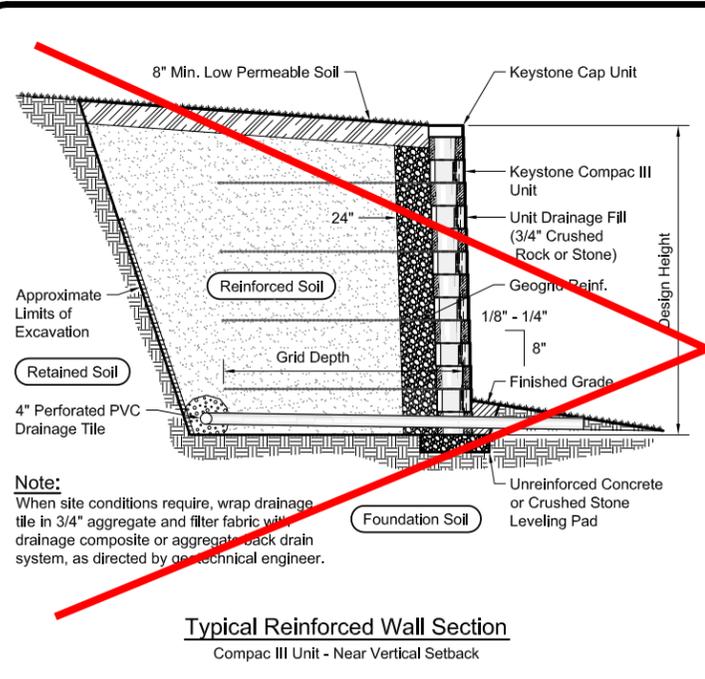
- B. Quality Assurance should include foundation soil inspection. Verification of geotechnical design parameters, and verification that the contractor's quality control testing is adequate as a minimum. Quality assurance shall also include observation of construction for general compliance with design drawings and project specifications. *(Quality Assurance is usually best performed by the site geotechnical engineer.)*
- C. Quality Control – The Contractor shall engage inspection and testing services to perform the minimum quality control testing described in the retaining wall design plans and specifications. Only qualified and experienced technicians and engineers shall perform testing and inspection services.
- D. Quality Control testing shall include soil and backfill testing to verify soil types and compaction and verification that the retaining wall is being constructed in accordance with the design plans and project specifications.

PART 4: MEASUREMENT AND PAYMENT

Contract shall be a lump sum to include the amount of square footage (blocks and caps) shown on the final engineering. If the wall needs to be increased in size from the contractor provided engineered design for reasons which cannot be foreseen by the contractor or his engineer designer, any additional square footage will be paid by the Owner at the rate described in the contractor's bid.







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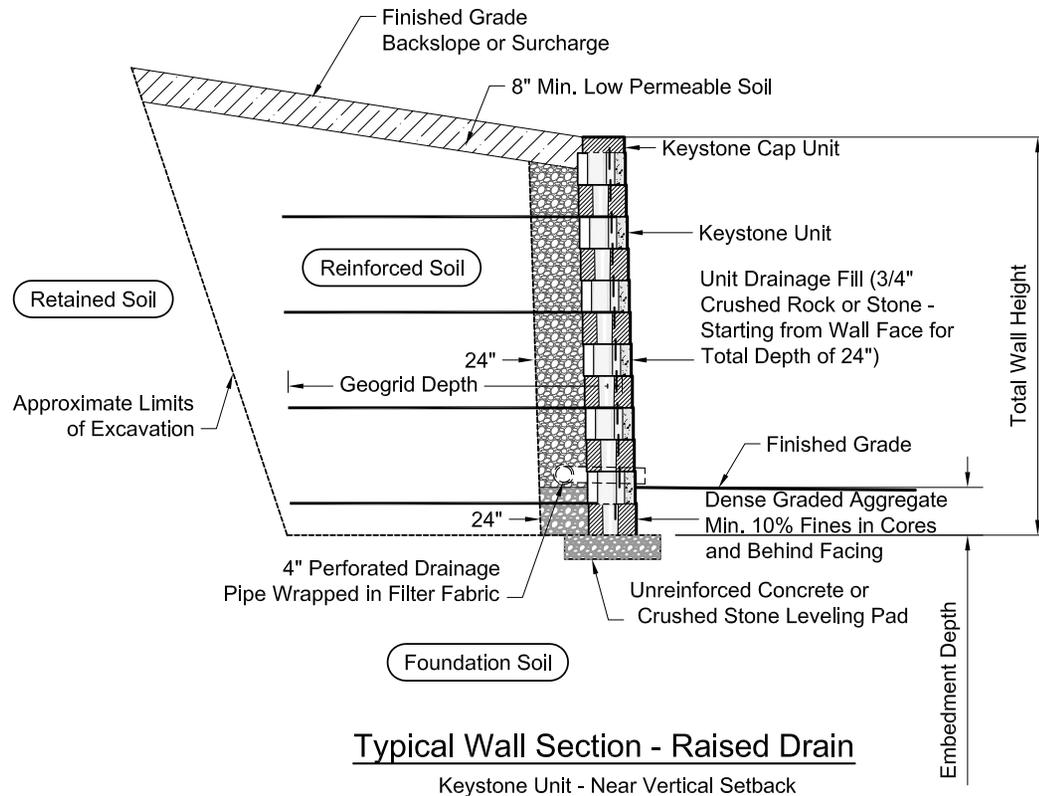
Design is for internal stability of the KEYSTONE wall structure only. External stability, including but not limited to foundation and slope stability is the responsibility of the Owner. The design is based on the assumption that the materials within the retained mass, methods of construction, and quality of materials conform to KEYSTONE's specification for this project.

This drawing is being furnished for this specific project only. Any party accepting this document does so in confidence and agrees that it shall not be duplicated in whole or in part, nor disclosed to others without the consent of Keystone Retaining Wall Systems, Inc.

No.	Date	Revision	By



Designed By: RKM	Title: Compac III Unit - Straight Face Details	Date:
Checked By: CDM	Project: Keystone Retaining Wall Systems Typical Wall Details	Project No:
Scale: No Scale		Drawing No:



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4444 West 78th Street
Minneapolis, MN 55435
952-897-1040

Designed By:
DMT

Checked By:
CDM

Scale:
No Scale

Title:

Typical Wall Section

Project:

Wall Details

Date:

6/2016

Project No:

Det

Drawing No:

1 of 1

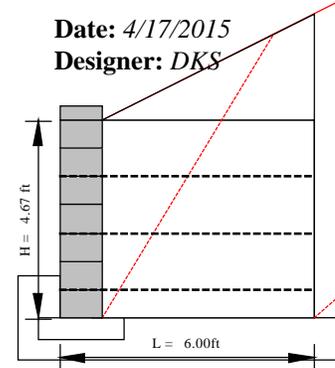


RETAINING WALL DESIGN

KeyWall_2012 Version 3.7.2 Build 10

Project: BICENTENNIAL PARK & GARDEN
Project No:
Case: Case 1
Design Method: Rankine-w/Batter (modified soil interface)

Date: 4/17/2015
Designer: DKS



Design Parameters

Soil Parameters:	ϕ deg	c psf	γ pcf
Reinforced Fill	28	0	120
Retained Zone	28	0	120
Foundation Soil	28	0	120
Reinforced Fill Type:	Sand, Silt or Clay		
Unit Fill:	Crushed Stone, 1 inch minus		

Minimum Design Factors of Safety

sliding:	1.50	pullout:	1.50	uncertainties:	1.50
overturning:	2.00	shear:	1.50	connection:	1.50
bearing:	2.00	bending:	1.50		

Design Preferences

Reinforcing Parameters: Strata-Grid Geogrids

	<u>Tult</u>	<u>RFcr</u>	<u>RFd</u>	<u>RFid</u>	<u>LTDS</u>	<u>FS</u>	<u>Tal</u>	<u>Ci</u>	<u>Cds</u>
SG200	3600	1.55	1.10	1.10	1919	1.50	1280	0.80	0.80

Analysis:

Case: Case 1

4.67' TOTAL WALL HEIGHT

Unit Type: CompacIII / 120.00 pcf

Wall Batter: 0.00 deg (Hinge Ht N/A)

Leveling Pad: Crushed Stone

Wall Ht: 4.67 ft

embedment: 1.00 ft

BackSlope: 26.60 deg. slope,

20.00 ft long

Surcharge: LL: 0 psf uniform surcharge

DL: 0 psf uniform surcharge

Load Width: 0.00 ft

Load Width: 0.00 ft

Results:

Factors of Safety:	<u>Sliding</u>	<u>Overturning</u>	<u>Bearing</u>	<u>Shear</u>	<u>Bending</u>
	1.56	4.56	8.87	7.18	2.89

Calculated Bearing Pressure: 855 / 855 psf

Eccentricity at base: 0.10 ft

Reinforcing: (ft & lbs/ft)

<u>Layer</u>	<u>Height</u>	<u>Length</u>	<u>Calc. Tension</u>	<u>Reinf. Type</u>	<u>Allow Ten Tal</u>	<u>Pk Conn Tcl</u>	<u>Pullout FS</u>
3	3.33	6.0	140	SG200	1280 ok	654 ok	6.75 ok
2	2.00	6.0	248	SG200	1280 ok	746 ok	6.59 ok
1	0.67	6.0	372	SG200	1280 ok	839 ok	6.76 ok

Reinforcing Quantities (no waste included):

SG200 2.00 sy/ft

NOTE: THESE CALCULATIONS ARE FOR PRELIMINARY DESIGN ONLY AND SHOULD NOT BE USED FOR CONSTRUCTION WITHOUT REVIEW BY A QUALIFIED ENGINEER