TO: **ALL HOLDERS OF BID DOCUMENTS**

PROJECT: **MULBERRY PARK & AMPHITHEATER AND MULBERRY PARK BUILINGS**

OWNER: **CITY OF HOSCHTON**
61 CITY SQUARE STREET
HOSCHTON, GA 30548

ENGINEER: **BREWER ENGINEERING, INC**
210 TRILITH PARKWAY
SUITE 100
ATLANTA, GA 30214

DATE: **NOVEMBER 26, 2025**

The items listed on the attached pages take precedence over referenced portions of Contract Documents for the project and, in executing a contract, shall become a part thereof.

Where any item called for in the Contract Documents is supplemented hereby, the original requirements shall remain in effect. All supplemental conditions shall be considered as added thereto.

Where any original item is amended, voided, or superseded hereby, the provisions of such items not so specifically amended, voided, or superseded shall remain in effect.

PART 1 – CHANGES TO THE SPECIFICATIONS

1-1 SECTION 005100 3.2 Liquidated Damages revision

A. Article 3-Contract Time, Section 3.2 revised the Liquidated Damages fill in the blank section, Page 005100-2. The liquidated damages amount it $ 500 / day was added to Section 3.2. Copy of revised section attached herewith.

1-2 SECTION 323223 MECHANICALLY STABILIZED EARTH WALLS ADDED

A. Added section 323223 Mechanically Stabilized Earth Walls to the Project Manual. Copy of new section attached herewith.

PART 2 – QUESTIONS AND ANSWERS

2-1 QUESTIONS:

1. 1. On the bid schedule, there are two (2) line items titled “Sidewalks” (01025-3.07 & 01025-3.10). What is the difference in these Sidewalks?
   ANSWER: Line Item 0125-3.07 is for sidewalk along West Broad Steet. Line Item 1025-3.10 is for all other concrete sidewalks on site.

2. On the bid schedule, both line items 01025-3.20 and 01025-3.21 have “Electrical” descriptions. What separate electrical scopes of work are being requested for each of the different line items?
   ANSWER: Line item 1025-3.20 Electrical is for all electrical work for buildings and site in general. Line items 1025-3.21 Electrical is for all electrical related to the pump station and forcemain.

3. I’ve looked throughout the entire bid documents but cannot find the exact amount of liquidated damages costs. How much are liquidated damages per day on this project?
   ANSWER: A section for Liquadated Damages is added in this addendum.

4. When is the last day for questions?
   ANSWER: December 5th is the last day for questions.

END OF ADDENDUM NO. 1

AGREEMENT

THIS AGREEMENT is dated as of the _____ day of _____ in the year ___, by and between City of Hoschton, Georgia (hereinafter called OWNER), and ___ _____ (hereinafter called CONTRACTOR). OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

The Project consists of, but is not limited to the following major elements:

Construction of Mulberry Park to include demolition as described on the plans, grading and erosion control for approximately 3.1 acres, installation of light duty asphalt, slate access drives, access gate, porous pavers, sidewalks, slate paths, wheels stops, signage, sidewalks, park furniture, pavilion, parking spaces, concrete stairs, design build retaining wall, pedestrian crossing, amphitheater seating, restroom, pump station and line work for restroom, ceramics building renovation, electrical for site and buildings, and all other associated appurtenances, as shown on the plans. Plans include Mulberry Park & Amphitheater, dated October 24, 2025 and Mulberry Park (includes plans for Rest Rooms, Pavilion, and Ceramic Building Renovation) dated October 24, 2025.

ARTICLE 1 - WORK

CONTRACTOR shall complete all WORK as specified or indicated in the CONTRACT DOCUMENTS. The WORK described previously includes all material, labor, tools, equipment, and any other miscellaneous items necessary to complete the work as described in the Technical Specifications and Construction Drawings.

ARTICLE 2 - ENGINEER

The Project has been designed by Brewer Engineering, who is hereafter referred to as Engineer, and who will assume all duties and responsibilities and will have the rights and authority assigned to Engineer in the CONTRACT DOCUMENTS in connection with completion of the WORK in accordance with the CONTRACT DOCUMENTS.

ARTICLE 3 - CONTRACT TIME

3.1 CONTRACTOR agrees to commence WORK within ten (10) days of a date to be specified in a written "Notice to Proceed" from the OWNER and to fully complete the contract in a total construction time of Three Hundred Sixty (360) consecutive calendar days from the date of the date of the "Notice to Proceed" from the OWNER.

3.2 Time for Completion: OWNER and CONTRACTOR recognize that time is the essence of this Agreement and that OWNER will suffer financial loss if the WORK is not substantially complete within the time specified in Paragraph 3.1 above, plus any extension thereof allowed in the General Conditions. They also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the WORK is not substantially complete on time. Accordingly, OWNER and CONTRACTOR understand and recognize that it is impossible to conclusively assess damages to the OWNER for the failure of the CONTRACTOR to substantially complete the project in a timely manner. Therefore, the OWNER and CONTRACTOR have agreed that a reasonable amount of damages for each day that the project remains incomplete after the contract time (as stated in paragraph 3.1) has expired would be the amount of $ 500.00/ DAY

ARTICLE 4 - CONTRACT PRICE

OWNER shall pay CONTRACTOR for performance of the WORK in accordance with the CONTRACT DOCUMENTS in current funds as follows: (Amount in words ($).

ARTICLE 5 - PAYMENT PROCEDURES

CONTRACTOR shall submit Application for Payment in accordance with the General Conditions. Applications for Payment will be processed by OWNER as provided in the General Conditions.

5.1 Progress Payments: CONTRACTOR shall furnish to OWNER, on forms furnished by OWNER, no later than the 25th day of each month, a progress payment request for the amount of work accomplished, products furnished, and products stored at the site during the previous month. The progress payment request shall be signed by the CONTRACTOR and be supported by such data as OWNER may reasonably require. ENGINEER shall review and indicate in writing approval of the payment request to the OWNER within ten (10) days after receipt of each progress payment request. The OWNER will, within thirty (30) days after receipt of progress payment request, pay CONTRACTOR based on the approved progress payment request, less the retainage and other deductions pursuant to the terms of these CONTRACT DOCUMENTS. (Ref. Section 00700).

5.1.1 Prior to Substantial Completion progress payments will made in an amount equal to:

90% of the WORK completed, and

100% of materials and equipment not incorporated in the WORK but delivered and suitably stored, less in each case the aggregate of payments previously made.

5.1.2 No amount shall be retained on progress payment requests submitted after 50% of the WORK has been completed if in the opinion of the OWNER or their authorized representative, such work is satisfactory and has been completed on schedule. This will not affect the retained amounts on the first 50% of the work which may continue to be held to ensure satisfactory completion of the project. If, after discontinuing the retention, OWNER determines that the work is unsatisfactory or has fallen behind schedule, retention may be resumed at the previous level. (Reference O.C.G.A., Article 2, Section 13-10-80)

5.1.3 If the CONTRACTOR falls behind schedule to the point that the time of completion, plus time extensions, has elapsed, then the amount specified for liquidated damages will be

deducted from all CONTRACTOR pay requests submitted after the latest time of completion.

5.1.4 If, after substantial completion, there are remaining incomplete minor items, an amount equal to 200 percent of the value of each item as determined by the OWNER shall be withheld until such item or items are completed.

5.2 Final Payment: Upon acceptance of WORK in accordance with the General Conditions, Section 00700, Article 14.07, OWNER shall pay balance due of Contract Price less payments previously made.

ARTICLE 6 - INDEMNIFICATION

The CONTRACTOR shall indemnify and hold harmless the OWNER and Consulting ENGINEER (also known as Brewer Engineering) and their agents and employees from and against all claims, damages, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from the performance of the WORK, provided that any such claim, damage, loss, expense or attorney's fees is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use resulting therefrom, and is caused in whole or in part by any negligent act or omission of the CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not the negligent act is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this Clause. In any and all claims against the OWNER or the Consulting ENGINEER (Brewer Engineering) or any of their agents or employees, by any employee of the CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation set forth in this paragraph shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any Subcontractor under workers' or workmens' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 7 - CONTRACTOR'S REPRESENTATIONS

In order to induce OWNER to enter into this Agreement, CONTRACTOR makes the following representations:

7.1 CONTRACTOR has familiarized himself with the nature and extent of the CONTRACT DOCUMENTS, WORK, locality, and with all local conditions and federal, state and local laws, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the WORK. CONTRACTOR is aware that he must be licensed to do business in the State of Georgia, as well as in the County of (Location of Project) _____, Georgia.

7.2 CONTRACTOR has studied carefully all reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the WORK which were relied upon by design ENGINEER in preparation of the Drawings and Specifications and which have been identified in the Supplemental General Provisions.

7.3 CONTRACTOR has made or caused to be made examinations, investigations and tests, and studies of such reports and related data, in addition to those referred to in Paragraph 7.2, as he deems necessary for the performance of the WORK at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the CONTRACT DOCUMENTS; and no additional examinations, investigations, tests, reports or similar data are or will be required by CONTRACTOR for such purposes.

7.4 CONTRACTOR has correlated the results of all such observations, examinations, investigations, tests, reports, and data with the terms and conditions of the CONTRACT DOCUMENTS.

7.5 CONTRACTOR has given OWNER written notice of all conflicts, errors, or discrepancies that he has discovered in the CONTRACT DOCUMENTS and the written resolution thereof by OWNER is acceptable to CONTRACTOR.

ARTICLE 8 - CONTRACT DOCUMENTS

The CONTRACT DOCUMENTS which comprise the entire agreement between OWNER and CONTRACTOR are attached to this Agreement, made a part hereof and consist of the following:

8.1 This Agreement
8.2 Exhibits to this Agreement include the following:
Advertisement for Bidders, Instructions to Bidders, Bid Form and associated documents
8.3 Performance and Labor and Material Payment Bonds
8.4 Notice of Award
8.5 Notice to Proceed
8.6 General Conditions
8.7 Supplemental General Provisions
8.8 Specification bearing the title Mulberry Park
8.9 Construction Drawings: Mulberry Park & Amphitheater, 1/8/2024 and Mulberry Park, 8/14/2024.
8.11 Addenda _____, inclusive. (Issued dates)_____.
8.12 CONTRACTOR'S Bid
8.13 Documentation submitted by CONTRACTOR prior to Notice of Award
8.14 Any modifications, including Change Orders, duly delivered after execution of Agreement.

There are no CONTRACT DOCUMENTS other than those listed above in this Article 8. The CONTRACT DOCUMENTS may only be altered, amended or repealed by expressed written consent of OWNER.

ARTICLE 9 - MISCELLANEOUS

9.1 Terms used in this Agreement which are defined in Article 1 of the General Conditions, shall have the meanings indicated in the General Conditions.

9.2 No assignment by a party hereto of any rights under or interests in the CONTRACT DOCUMENTS will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation, moneys that may become due and moneys that are due, may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the CONTRACT DOCUMENTS.

9.3 OWNER and CONTRACTOR each binds himself, his partners, successors, assigns and legal representatives to the other party hereto, his partners, successors, assigns and legal representatives in respect to all covenants, agreements, and obligations contained in the CONTRACT DOCUMENTS.

9.4 The term Special Conditions as used in the General Conditions or elsewhere in the CONTRACT DOCUMENTS, refers to the "Supplementary General Provisions".

9.5 The Supplementary General Provisions are intended to supplement, rather than replace, the General Conditions, except where the Supplementary General Provisions are in direct conflict with the General Conditions, the Supplementary General Provisions shall control.

ARTICLE 10 - PROVISIONS FOR TERMINATION OF CONTRACT

10.1 If through any cause, other than an "Excusable Delay", CONTRACTOR shall fail to fulfill its obligations under this Contract in a timely and proper manner, or if CONTRACTOR shall violate any of the covenants, agreements, conditions or obligations of the CONTRACT DOCUMENTS; OWNER may terminate this Contract as defined in the General Conditions. In such event, OWNER may take over the WORK and prosecute the same to completion, by Contract or otherwise, and CONTRACTOR and his sureties shall be liable to OWNER for any additional cost incurred by OWNER in its completion of the WORK and they shall also be liable to OWNER for liquidated damages for any delay in the completion of the WORK as provided below.

10.2 Liquidated Damages for Delay: If the work is not completed within the time stipulated, therefore, including any extensions of time for excusable delays as herein provided, CONTRACTOR shall pay to OWNER as fixed and agreed, liquidated damages (as stated in Article 3 Paragraph 3.2) for each working day of delay, until the work is completed, and CONTRACTOR and his sureties shall be liable to OWNER for this amount.

10.3 Excusable Delays: The right of CONTRACTOR to proceed shall not be terminated nor shall CONTRACTOR be charged with liquidated damages for any delays in the completion of the work due:

10.3.1 To any acts of the Government, including controls or restrictions upon or requisitioning of materials, equipment, tools, or labor by reason of war, National Defense, or any other national emergency;

10.3.2 To causes not reasonably foreseeable by the parties to this Contract at the time of the execution of the Contract which are beyond the control and without the fault or negligence of CONTRACTOR, including, but not restricted to, acts of a public enemy, acts of another CONTRACTOR in the performance of some other contract with OWNER, fires, floods, epidemics, quarantine, freight embargoes, and weather of unusual severity such as hurricanes, tornados, and cyclones;

10.3.3 To acts of OWNER which cause delays, and;

Provided, however, that CONTRACTOR promptly notified OWNER within ten (10) days in writing of the cause of the delay. Upon receipt of such notification, OWNER shall ascertain the facts and the cause and extent of delay. If upon the basis of the terms of this Contract, the delay is properly excusable, OWNER shall extend the time for completing the WORK for a period of time commensurate with the period of excusable delay.

IN WITNESS WHEREOF, the parties hereto have signed this Agreement. All portions of the CONTRACT DOCUMENTS have been signed or identified by OWNER, OWNER's Attorney, CONTRACTOR, or by ENGINEER on OWNER's behalf.

This Agreement will be effective on the date of the Agreement as shown on page 00510-1.

City Hoschton
OWNER

BY: Debbie Martin

TITLE: Mayor

ATTEST: _____
Clerk

(Seal)

_____
CONTRACTOR

BY: _____

TITLE: _____

ATTEST: _____
Corporate Secretary/Partner/Notary
(Seal)

NOTE: Attest for a corporation must be by the corporate secretary; for a partnership by another partner; for an individual by a Notary.

ADDRESSES FOR GIVING NOTICE

OWNER:	CONTRACTOR:
_____	_____
_____	_____
_____	_____
Phone: _____	Phone: _____
Fax: _____	Fax: _____
Email: _____	Email: _____

END OF SECTION

SECTION 323223
MECHANICALLY STABILIZED EARTH WALLS

1.0 GENERAL

1.1 DESCRIPTION:

A. Mechanically Stabilized Earth Wall (MSEW) - The work includes permitting, furnishing, constructing, and testing a system, including leveling pad, masonry block units, geosynthetic soil reinforcement, unit fill, select backfill, and related materials required for MSEW construction to the lines and grades shown on the construction drawings and specified herein.

1.2 RELATED SECTIONS:

A. Section 31 1000 - Site Clearing

B. Section 33 4100 – Storm Sewer Systems

C. Section 31 2000 – Earth Moving

D. Construction Drawings

1.3 REFERENCE STANDARDS:

A. The latest edition or revision of the following reference documents shall apply. Where specifications and reference documents conflict, the specifications shall govern.

1. ASTM

a.	C 33	Specification for Concrete Aggregates
b.	C 90	Hollow Load Bearing Masonry Units
c.	C 140	Methods of Sampling and Testing Concrete Masonry Units
d.	C 145	Solid Load Bearing Concrete Masonry Units
e.	C 150	Specification for Portland Cement
f.	C 595	Specification for Blended Hydraulic Cements
g.	C 1262	Evaluating the Durability of Concrete Masonry Units and Concrete Masonry
h.	C 1372	Specifications for Segmental Retaining Wall Units
i.	D 1248	Specification for Corrugated Plastic Pipe
j.	D 1557	Moisture Density Relationship for Soils, Modified Proctor Density Method
k.	D 422	Gradation Analysis
l.	D 4318	Atterberg Limits
m.	D 4595	Tensile Properties of Geotextiles by the Wide Width Strip Method
n.	D 4632	Tensile Properties of Geotextiles
o.	D 5262	Tensile Creep Testing of Geosynthetics
p.	D 698	Moisture Density Relationship for Soils, Standard Proctor Density Method

q. D 2166 Triaxial Shear Test
r. D 3034 Specification for Polyvinyl Chloride (PVC) Plastic Pipe
s. D 3080 Direct Shear Test
t. D 5262 Unconfined Tension Creep of Geosynthetics
u. D 5321 Coefficient of Soil and Geosynthetic
v. G 51 Alkalinity
w. G 57 Resistivity

2. American Association of State Highway and Transportation Officials (AASHTO)
   a. AASHTO Standard Specification for Highway Bridges
   b. AASHTO T-27 Test Method for Gradation Limits – Fine Filter Material

3. Federal Highway Administration (FHWA)
   a. Mechanically Stabilized Earth Walls and Reinforced Soil Slope Design and Construction Guidelines (FHWA NHI-00-043, March 2001)

4. Geo-synthetic Research Institute (GRI)
   a. GG1 Standard Test Method for Geosynthetic Rib Tensile Strength
   b. GG2 Standard Test Method for Geosynthetic Junction Strength
   c. GG4-91 Determination of Geosynthetic Long Tern Design Strength
   d. GG5-91 Geosynthetic Pullout

5. National Concrete Masonry Association (NCMA)
   a. NCMA Design Manual for Segmental Retaining Walls (Second Edition, 1997)
   b. SRWU-1 Connection Strength of Segmental Retaining Wall Units and Geosynthetic
   c. SRWU-2 Shear Strength between Segmental Retaining Wall Units

1.4 DESIGN REQUIREMENTS:

A. Design of SRW's with geosynthetic-reinforcement shall conform to the minimum safety factors in this Specification.
   1. Geosynthetic reinforcement (geogrid or geotextile) shall be in accordance with FHWA NHI-00-043 Mechanically Stabilized Earth Walls and Reinforced Soil Slopes Design and Construction Guidelines".

B. Design Requirements – Unless otherwise indicated below, the MSEW design shall be performed in compliance with the FHWA NHI-00-043 (2001) design method. Design submittals not meeting this design criteria or technical/administrative criteria as specified will be rejected in its entirety until complete compliance is achieved. The Architect or Owner's representative reserves all rights in determining compliance for plan approval and may reject any submittals.

Internal Stability	Minimum Factor of Safety
Sliding……	1.5
Pullout……	1.5
Tensile Overstress……	1.5
Pullout (Peak)……	1.5
Facing Shear (Peak)……	1.5
Facing Connection (Peak)……1.5	
Facing Connection (Serviceability)……N/A	
Uncertainties……	1.5

External Stability	Minimum Factor of Safety
Base Sliding……	1.5
Overturning……..	2.0
Bearing Capacity……	2.0

Global Stability	Minimum Factor of Safety
Global External (Bishop)……..……	1.3
Compound Internal (Bishop)……..……	1.3
Translational 2-Part Wedge(Spencer)……	1.3
Global External 3-Part Wedge (Spencer)1.3	

C. In addition the design shall:
   1. Address hydrostatic, seismic, rapid draw down, surcharge and backfill slope loading as shown on the site grading and drainage plans. A minimum live load of 250-psf shall be used for all walls supporting areas subject to traffic.
   2. Seismic analyses must be performed if the project is located in a seismic impact zone, i.e., a horizontal acceleration coefficient greater than or equal to 0.1g. Seismic factors of safety to be 75% of the minimum static factors of safety. Refer to NEHRP seismic maps.
   3. Provide a minimum reinforcement length of 70% the total height of the wall, H_w, for cross sections with no toe or crest slopes, i.e., $L=0.7H_w$.
   4. Wall sections with a toe slope, crest slope or both crest and toe slope shall provide a minimum reinforcement length of 70% the total height of the wall, H_w, plus height of slope(s), H_s, i.e. $L=0.7(H_w + H_s)$.
   5. Provide 100% geosynthetic coverage (no gaps).
   6. The maximum spacing between vertically adjacent reinforcing layers of no more than 2 times the MSEW unit depth (face to tail) or a maximum vertical spacing of 2.0-feet.

D. Soil design parameters shall be as provided in the construction documents. The MSEW Engineer of Record shall be responsible for selecting and specifying reinforced fill material and soil testing requirements for the reinforced fill. Reinforced and retained fill material shall have a minimum angle of internal friction of 30-degrees. Contractor is responsible for ensuring and documenting the reinforced fill meets the specified parameters for both strength and compaction.

1.5 SUBMITTALS:

A. The MSEW contractor shall provide to the Owner a minimum of 14-days prior to the anticipated start date for the MSEW a submittal package including the following:

1. A set of detailed MSEW design plans sealed by a registered professional engineer licensed in the State of Georgia. The professional engineer shall have a minimum of five (5) years of experience in designing retaining wall systems of similar type and size to that which is being proposed. The MSEW plans shall include all details, dimensions, quantities and cross sections necessary to construct the MSEW and shall include:
    a. Plan, elevation and cross section views for each wall,
    b. Details for cap blocks, coping, or barriers constructed as part of the wall contract,
    c. Construction specifications, and
    d. Computer generated outputs demonstrating compliance with this Specification must be provided.
        i. The computer program MSEW 3.0 based on FHWA NHI-00-043 is acceptable. Detailed hand calculations demonstrating compliance with this Specification must be submitted if no computer program is used for design.
        ii. The FHWA method based on NHI-00-043 and Demo 82 are the same with respect to external stability and internal stability. The difference between NHI-00-043 and Demo 82 is related to connection analyses as follows:
            - Demo 82 (ASD) is based on *short-term connection tests*, which are commonly done at most testing labs.
            - NHI-043 (ASD) is based on *long-term creep connection tests*. NHI-043 (ASD) method is applicable only if a creep connection test is performed.
            - If a creep connection test has not been performed, then Demo 82 (ASD) must be used for the connection analysis.
        iii. Overall stability calculations with respect to global external, compound internal and translation stability can be determined using the following computer program: ReSSA (v2.0).
2. Propriety product literature indicating which Mechanically Stabilized Earth Wall (MSEW) units and soil reinforcement are proposed for use on the project including color, face style and texture. Contractor to provide the Architect and Owner with a minimum of three different standard color options to select from (Grey, Buff, & Mocha). The color options are to be included in the base bid amount. Architect or Owner shall select color, face style, and texture.
3. Documentation for the MSEW units and soil reinforcement demonstrating compliance with the requirements of this specification including but not limited to MSEW compressive strength, absorption and durability; MSEW/geosynthetic reinforcement connection and block shear capacity; geosynthetic reinforcement coefficients for direct sliding and interaction; and geosynthetic reinforcement reduction factors for creep, durability, installation damage and pullout.
4. Manufacturer's certification that MSEW units meet the requirements of this specification.
5. Manufacturer's certification that the geosynthetic reinforcement meets the requirements of this specification.

6. Mechanically Stabilized Earth Wall system engineer's certification that the design complies with this specification and documented proof of current professional and general liability insurance with an aggregate coverage of not less than $1,000,00.00.
7. Contractor's certification that
   a. The specific MSEW system proposed for use on this project has been successfully used on a minimum of ten (10) similar projects and has been successfully installed on a minimum of 1,000,000 square feet of retaining walls.
   b. The contractor has a minimum of 1,000,000 square feet of experience within the previous five (5) years with the proposed SRW system. Contact names and telephone numbers shall be listed for projects used to document the 1,000,000 square feet.
8. Contractor shall be responsible for providing all required MSEW wall building permits for the project.
9. Contractor shall be responsible for providing final wall certification by professional engineer responsible for the MSE wall design. Certification letter to certify that the MSE wall has been constructed properly and meets or exceeds all design criteria and permit criteria.

1.6 DELIVERY, STORAGE AND HANDLING:

A. Contractor shall check the concrete masonry units upon delivery to assure that the specified type; grade, texture, color have been received. Contractor shall prevent excessive mud, wet concrete, epoxies, and like material, which may affix themselves from coming in contact with the concrete masonry units. Damaged materials shall not be incorporated into the MSEW system.

B. Check the soil reinforcement upon delivery to assure the proper grade and type of material been received. Provide a product certification with each shipment. Store geosynthetic reinforcement in accordance with the manufacturer's recommendations.

C. Store plastic pipe in accordance with the manufacturer's recommendations to prevent deleterious materials from becoming affixed. Store drainage aggregate to prevent contamination with other materials.

1.7 QUALITY ASSURANCE:

A. Engineer Qualifications: Professional engineer legally authorized to practice in jurisdiction where project is located.

B. Installer Qualifications: Engage an experienced Installer who has constructed interlocking block retaining walls similar in design and extent to that indicated for this Project and with a record of successful in-service performance.

C. Single-Source Responsibility for Masonry Units: Obtain exposed masonry units of uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from one manufacturer for each different product required for each continuous surface or visually related surfaces.

D. Testing and Inspection Service: General Contractor will employ a qualified independent geotechnical engineering testing agency to verify that soils comply with specified requirements and to perform all required field and laboratory testing required by MSEW Engineer of Record.

2.0 PRODUCTS

2.1 DEFINITIONS:

A. Segmental Concrete Units – concrete masonry units shall be machine made from Type I, Type II or Type III Portland cement, water and mineral aggregates in accordance with ASTM C150. Concrete masonry units shall have a minimum 28-day compressive strength of 3,000-psi on the net area and have a maximum absorption rate of 8.0 percent.

B. Geosynthetic Reinforcement – structural geogrid or geotextile reinforcement 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 as reinforcement. Soil reinforcement shall be specifically manufactured for soil reinforcement.

C. Unit Fill – drainage aggregate that is placed within and behind the segmental concrete units. Applicable for block systems utilizing a frictional connection.

D. Reinforced Backfill – compacted soil within the reinforced soil volume as shown on the plans.

E. Retained Soil – compacted imported or in-situ soil behind reinforced zone of the retaining wall.

F. Foundation Soil – compacted imported or in-situ soil beneath entire wall.

G. Leveling Pad – level compacted gravel or un-reinforced concrete footing upon which first course of segmental concrete facing units are placed.

2.2 SEGMENTAL CONCRETE UNITS SHALL MEET THE FOLLOWING REQUIREMENTS:

A. Manufactured in accordance with ASTM C1372.

B. Minimum 28-day compressive strength of 3000-psi.

C. Maximum moisture absorption of 8%.

D. Pass ASTM C1262 using a water solution. The criteria for passing the test is 100 cycles with less than 1% loss in 5 of 5 samples or 150 cycles with less than 1/5% loss in 4 of 5 samples.

E. Dimensional tolerances shall be within +/-1/8 inch from published standard on overall vertical dimensions, but shall not vary more than +/-1/16 inch as measured from the lowest to highest point across the top surface of the unit from a level base plane.

F. Modular units shall provide an in-place weight of 100-pcf to 120-pcf including the unit fill (vertical core systems only), which is contained within the nominal dimension of the unit.

G. Units shall have angled sides capable of concave and convex alignment curves with a minimum radius of 3.5-feet.

H. Minimum inter-unit shear strength of 500-lbs/ft at 2-psi normal pressure per NCMA SRWU-2.

I. Minimum geosynthetic to SRW unit peak connection strength of 500-lbs/ft at 2-psi normal pressure per NCMA SRWU-1.

J. The wall supplier shall demonstrate by laboratory testing and engineering calculations that the strength of the connection between geosynthetic reinforcement and segmental concrete block units is capable of meeting or exceeding the maximum tensile force within a given geosynthetic reinforcement layer with a minimum Factor of Safety of 1.5.

K. MSEW units exposed faces shall be free of chips, cracks or other imperfections when viewed from a distance of 10-feet under diffused lighting.

2.3 SOIL REINFORCEMENT:

A. Geosynthetic Reinforcement – The geosynthetic shall be evaluated in accordance with FHWA NHI-00-043 where

$$T_{Allowable} = \frac{T_{Ultimate}}{RF \times FS} = \frac{T_{Ultimate}}{RF_{CR} \times RF_{ID} \times RF_{D} \times FS}$$

B. Tult shall be the minimum average roll value (MARV) ultimate tensile strength per ASTM D4595.

C. RFcr, Creep Reduction Factor shall be determined in accordance with FHWA NHI-00-043 Appendix B with results extrapolated for a 75-year design life. A minimum of one 10,000-hour creep tension test per ASTM D5262 is required to determine RFcr. Short term testing by itself is insufficient.

D. RFid, Installation Damage reduction factor, shall be determined from construction damage tests for each product proposed for use with project specific, representative or more severe backfill and construction techniques. The backfill soil used, if other than project specific, shall have a D50>0.6mm (No. 30 sieve). Testing shall be consistent with ASTM D5818. Default RFid value of 3.0 shall be used if such testing has not been conducted. The minimum RFid shall be 1.10.

E. RFd, Durability reduction factor, is the combined partial factor for potential chemical and biological degradation. A default RFd of 2.0 shall be used if durability testing has not been conducted. The minimum RFd shall be as follows:

1. HDPE……. 1.1
2. PET…… 1.1

F. Direct Sliding Coefficient, Cds value shall be determined from pullout tests per GRI:GS-6. The maximum pullout force used to determine Cds shall be limited to the lesser of Ta or the force that yields 1.5 inches displacement. The minimum Cds value shall not be greater than 1.0 where the Cds value is determined follows:

$$C_{ds} = \frac{F}{L\,\sigma_N \tan\phi}$$ Where

F = Maximum shear resistance from direct shear test (lb/ft), per GRI:GS-6

L = Geosynthetic Embedment Length in Test (ft)

σ_N = Effective Normal Stress (psf) at range from 500 to 1000 psf

ϕ = Effective Soil Friction Angle, Degrees

G. Soil/Geosynthetic Interaction Coefficient, Ci value shall be determined from pullout tests per GRI:GG-5. The maximum pullout force used to determine Ci shall be limited to the lesser of Ta or the force that yields 1.5 inches displacement. The minimum Ci value in silty-Sand shall be 0.9 where the Ci value is determined follows:

$$C_i = \frac{F}{2\,Le\,\sigma_N \tan\phi}$$ Where

F = Pullout force (lb/ft), per GRI:GG-5

Le = Geosynthetic Embedment Length in the Anchorage Zone in Test (ft)

σ_N = Effective Normal Stress (psf) at range from 500 to 1,000 psf

ϕ' = Effective Soil Friction Angle, Degrees

H. The following additional requirements shall apply.

1. Geogrid shall have minimum junction strength of 40-pounds per foot per GRI:GG2. If this criterion is not met then the geogrid shall have a minimum mass of 8 oz/sy and meet the strength requirements of AASHTO M-288-96 Class 1 geotextile.
2. All geogrids shall have a minimum stiffness (flexural rigidity) of 30,000 mg-cm per ASTM D1388. If this criterion is not met then the geogrid shall be staked during placement.
3. PET geogrids shall be coated with a suitable coating immutably bonded to PET bundles. The coating shall contain a minimum of 1% carbon black measured per ASTM 4218. If this criterion is not met then the minimum RFd shall be 1.6.
4. PET geosynthetics shall be coated and possess a Molecular Weight greater than or equal to 25,000 grams/mole as per GRI:GG8 and a carboxyl end group number less than or equal to 30 as per GRI:GG7. PET geosynthetics not meeting this criteria shall use a minimum RFd=2.0.
5. HDPE geogrids shall possess a melt flow index value greater than or equal to 0.88. HDPE geogrids not meeting this criteria shall use a minimum RFd=2.0.

I. Manufacturing Quality Control – The purpose of the QC testing program is to verify that the proposed geosynthetic being supplied to the project is representative of the geosynthetic used for all performance testing described above. The geosynthetic manufacturer shall have a manufacturing quality control program that includes QC testing no less frequently than each 400,000 sf of production. All QC testing shall be performed by an independent GAI-LAP facility. The testing as a minimum shall include Tensile Strength per ASTM D4595.

2.4 UNIT FILL:

A. Shall consist of clean 1" minus crushed stone or crushed gravel meeting the following gradation per ASTM D422.

Sieve Size	Percent Passing
1 inch	100
¾-inch	75-100
No. 4	0-10
No. 40	0-5

B. A minimum of 1.0-cubic foot of unit fill shall be used for each square foot of wall face and shall be placed within vertically oriented cores, between and behind the SRW units.

C. Drainage collection pipe shall be 4-inch perforated/slotted schedule 40 PVC or corrugated HDPE pipe. The pipe may be covered with a knitted or non-woven geotextile sock to function as a filter. Drainage pipe shall be manufactured in accordance with ASTM D3034 or ASTM D1248.

D. Collector drain located at the backside of the reinforced zone shall be constructed using drainage aggregate wrapped in a geotextile filter fabric. The minimum dimension of the collector drain shall be 3.0-feet wide by 1.0-foot high.

E. All systems must use #57 stone within the core fill and 12 inches behind the proposed block units.

2.5 REINFORCED BACKFILL:

A. Fill material used to construct the soil reinforced and retained zones (where applicable) shall consist of one of the following inorganic soil types according to their USCS designations (GP, GW, SW, SP, SM). The fill material must also meet the gradation below and the strength requirements noted below. Maximum particle size to be ¾-inches.

Sieve Size	Percent Passing
¾-inch	75-100
No. 4	20-100
No. 40	0-60
No. 200	0-35

1. Less than 35% passing the No. 200 sieve per ASTM D422.
2. Materials passing the No. 40 sieve should have a liquid limit less than 35 and a plasticity index less than 10 as per ASTM D4318.
3. An effective internal angle of friction greater than or equal to 30-degrees per ASTM D2166 or D3080 at the compaction standard.
4. Fill containing brush, sod, peat, roots, or other organic, perishable, or deleterious matter including, but not limited to snow, ice, or frozen soils, shall be considered unsuitable material and shall be removed. Less than 0.5% organic material.

B. Use of an effective friction angle greater than 30-degrees for design shall be verified by appropriate testing submitted to and approved by the Owners engineer prior to construction.

C. The pH of the backfill soil shall be between 5 and 8 when tested in accordance with ASTM G51.

D. Soils Report provides data on the existing soils available on site for backfill of the MSE walls. Contractor is required to provide suitable backfill for all MSE walls on site whether the suitable backfill is present on site or must be imported to the site. The cost of all backfill material, importing, and labor to place backfill is to be included in the contractors Base Bid. All required MSE backfill material whether located on site or not shall be included in the base bid of the project. If suitable MSE backfill material is available on site, the contractor is responsible for managing and planning all grading operations to identify areas of suitable backfill material, harvesting the material, stockpiling, and protecting the material until it is utilized for the backfilling operation for the MSE wall.

3.0 EXECUTION

3.1 PREPARATION AND EXCAVATION:

A. Include all means of subsurface improvement as required.

B. Comply with all state and local requirements for execution of the work, including local building codes and current OSHA excavation regulations. The General Contractor is responsible for stability of the area during excavation and wall construction. Any excavation support required to maintain/protect existing structures, utilities, landscape features or property shall be the responsibility of the General Contractor.

C. Prior to undertaking any grading or excavation of the site, confirm the location of the retaining walls and all underground features, including utility locations within the area of construction. Ensure surrounding structures are protected from effects of wall excavation.

D. Coordinate installation of underground utilities with wall installation.

E. Control surface water drainage and prevent inundation of the MSE wall area during construction.

F. 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. Proofroll foundation area and perform on-site bearing capacity tests as directed to determine if foundation improvement is required.

G. Before construction of the reinforced wall, the contractor shall clear and grub the fill zone area removing topsoil, brush, sod, organics, or other deleterious materials. Any unsuitable soils shall be over-excavated and replaced before placing additional fill soils.

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

I. Foundation bearing capacity shall be inspected by a local geotechnical testing company. The engineer shall confirm with a field inspection that the foundation has been properly prepared and the bearing capacity requirements are appropriate before placement of the geosynthetic reinforced zone.

Required Bearing Capacity (psf) > 3,000 psf "or"
= Level Backfill: q = □*1.3
= 2H:1V Backfill: q = □H*1.5

J. A pre-construction meeting shall be conducted by the General Contractor prior to beginning construction on segmental retaining walls. Owner and Architect shall be notified of the date, time, and location of the meeting. Mandatory attendees include the General Contractor, the wall design engineer of record, the project geotechnical engineer, the Contractor's testing agency, Owner's independent testing laboratory, and representatives of all sub-contractors involved with the foundation preparation, erection, and backfilling of the SRW. Meeting topics shall include, but are not limited to contractor qualifications as stated above; schedule and phasing of wall construction; coordination with other on-site construction activities; responsibilities of parties; and sources, quality, and acceptance of materials. Location and coordination of backfill soil sources for the retaining wall must be discussed and acknowledged prior to any site grading. If contractor fails to protect and utilize soils designated as suitable backfill for segmental block retaining walls contractor will be responsible for providing appropriate suitable backfill at their expense and at no additional cost to owner.

3.2 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 and extend laterally a minimum of 6-inches in front and behind the concrete masonry unit.

B. Leveling pad materials to be compacted to a minimum 95% Standard Proctor density per ASTM D-698.

C. Leveling pad shall be prepared to ensure full contact to the base surface of the MSEW units.

D. 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 ensure that all units are in full contact with the base and properly seated.

3.3 SRW UNIT INSTALLATION:

A. Place the front of unit's side-by-side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance with manufacturer's recommendations.

B. Install mechanical shear/connecting devices per manufacturer's recommendation.

C. Place and compact drainage fill within and behind wall units (frictional systems only). Place and compact backfill soil behind drainage fill. Follow wall erection and drainage fill closely with structure backfill.

D. Maximum-stacked vertical height of wall units, prior to unit drainage fill and backfill placement and compaction, shall not exceed two courses.

3.4 GEOSYNTHETIC INSTALLATION:

A. Geosynthetic reinforcement shall be oriented with the highest strength axis (machine direction) perpendicular to the wall alignment. Contractor shall verify correct orientation.

B. Reinforced fill zone length is measured from the backside of the masonry block units unless otherwise noted on drawings.

C. Geosynthetic reinforcement shall be continuous throughout embedment lengths and placed side-by-side to provide 100% coverage at each level. Spliced connections between shorter pieces of geosynthetic or gaps between adjacent pieces of geosynthetic are not permitted.

D. Before placing fill, the geosynthetic materials shall be placed to lay flat, or slightly sloping downward away from the wall face on compacted backfill and mechanically attached to the masonry block units. Place the next course of masonry block units over the geosynthetic. The geosynthetic shall be pulled taut to remove any slack in the geosynthetics, and anchored prior to backfill placement on the geosynthetic.

E. Tracked construction equipment shall not be operated directly on the geosynthetic reinforcement. A minimum fill thickness of 6 inches is required for operation of tracked vehicles over the geosynthetic reinforcement. Turning of tracked vehicles should be kept to a minimum to prevent tracks from displacing the fill and the geosynthetic reinforcement.

F. Rubber-tired vehicles may pass over the geosynthetic reinforcement at slow speeds, less than 10-mph. Sudden braking and sharp turning shall be avoided.

G. Geosynthetic reinforcement shall be cut next to the cross machine direction (CMD) apertures. Cross machine direction apertures shall be placed along the front face of the MSE wall.

3.5 REINFORCED BACKFILL PLACEMENT:

A. Construct wall in location and to top and bottom elevations shown on grading plans.

B. Reinforced backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack in the geosynthetic and installation damage. Reinforced backfill materials shall be placed from the wall face back toward the ends of the geosynthetic to ensure further tensioning of the reinforcement.

C. Reinforced backfill shall be placed and compacted in lifts not to exceed 6-inches where hand compaction is used, or 8-inches where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required density as required.

D. Reinforced backfill shall be compacted to 95% of the maximum density as determined by ASTM D698. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be within a range of 2% below to 2% above optimum moisture content.

E. Fill shall be placed in horizontal layers not exceeding 6-inches in uncompacted thickness for zones where compaction is accomplished with hand-operated equipment. Only lightweight hand-operated equipment shall be allowed within 4-feet from the face of the MSEW unit.

F. The infill soil shall be compacted in maximum 8-inch compacted lifts to the following minimum densities (percentage of the maximum standard Proctor ASTM D698):
   1. fine grained (SM) soils to a minimum of 95 percent Standard Proctor within -2/+2 percent of optimum moisture content, whichever is greater; and
   2. course grained (GP, GW, SW, SP) soils to a minimum of 95 percent Standard Proctor.

G. Testing methods and frequency, and verification of material specifications and compaction shall be the responsibility of the project geotechnical engineer.

H. Wall including reinforced mass shall be constructed on foundation soils having a minimum internal friction angle of 30-degrees to a minimum depth of one third (1/3) the wall height or a net allowable bearing pressure as stated in Section 3.1.I.

I. Reinforced fill shall be compacted to the top of each row of masonry block units prior to the placement of the next row of masonry block units.

J. Masonry block units shall be placed not more than 2-courses above level backfill.

K. Contractor shall have an approved set of plans and specifications on site at all times during construction of the wall.

3.6 RETAINED BACKFILL PLACEMENT:

A. Retained backfill shall be compacted to a minimum 95 percent Standard Proctor density (ASTM D698) in landscape areas. Retained backfill located below crest slopes or pavement structures shall be compacted to a minimum 98 percent Standard Proctor density or to the density recommended by the project geotechnical engineer.

3.7 CAP INSTALLATION:

A. If applicable, cap units shall be permanently secured to the masonry block units using an approved construction adhesive conforming to ASTM 2339.

B. The general contractor shall verify the in-place top of wall elevation before installing the top units. Top units may require shifting to comply with the design elevations.

C. Incorporate surface water drainage control (swale) into the finished grade at top of wall, as shown on the construction drawings, where applicable.

3.8 AS-BUILT CONSTRUCTION TOLERANCES:

A. Vertical alignment: ±0.75-inch over any 10.0-foot distance.

B. Wall Batter: Must be within 1.0-degrees of design batter. The wall batter is to be vertical.

C. Horizontal alignment: ±1.5-inch over any 10.0-foot distance and in corners, bends and curves ± 1.0-foot of the theoretical location.

a. Maximum horizontal gap between erected units shall be 1/8-inch.

3.9 FIELD QUALITY CONTROL:

A. The General Contractor shall employ inspection and testing services, including independent laboratories, to provide quality assurance and testing services during construction. As a minimum, quality assurance testing should include foundations soil inspection, soil and backfill testing, verification of design parameters, and observation of construction for general compliance with design drawings and specifications. The Contractor shall secure the necessary construction quality control testing during construction in order for the MSEW Design Engineer of Record to certify that the walls were built in accordance with the design.

B. Quality control testing and inspections services shall only be performed by qualified soil technicians and geotechnical engineers.

C. Quality control testing, as a minimum shall include:

1. Special inspector shall verify / document each of the following:
    a. Correct reinforcement type, elevation, length, orientation, reinforcement tensioning procedures, placement of drainage materials & outlets to be observed by the project geotechnical engineer.
    b. Verification of entire foundation (entire reinforcement length, L) must be observed by the project geotechnical engineer.
    c. Field location in plan and elevation, wall batter to be observed by the project surveyor.
2. Reinforced Soil Testing
    a. Every new soil type and/or every 2,000 cy run pH, Atterberg Limits, Sieve Analysis, Proctor new soil type per geotechnical field personnel.

b. Triaxial Test on every appreciable different soil type based on index testing.
c. Run Consolidated-Undrained Triaxial Shear Tests and report the stress strain test results as well as present the Mohr-Coulomb failure diagram for peak and residual stress levels, as required by ASTM. The geotechnical consultant will provide a recommended effective internal friction angle based on their results.
d. Run compaction tests as follows:
    i. Every two-foot change in height and interval of 100-feet of Wall length.
    ii. Run 4 compaction tests one within 4-feet of face, and three others randomly throughout the reinforced soil zone.

3. Retained Soils Testing:
    a. Every new soil type and/or every 2,500-cy run Atterberg Limits, Sieve Analysis, Proctor per Geotech Field Personnel and if different from Reinforced Soil.
    b. Cohesion in the retained soil should not be used in design even if the failure envelope determined from shear tests indicates that such value temporarily exists.
    c. Run compaction tests as follows:
        i. Every two-foot change in height and interval of 200-feet of Wall length.
        ii. Run 3 compaction tests one within 3-feet of reinforced zone and two others randomly throughout the retained soil zone.
4. Foundation Soils Testing
    a. Strength testing at time of design. Generally, one in the worst area would suffice.
    b. IF foundation fill is required, treat as if it were reinforced soil fill, those criteria apply.
    c. Verify foundation bearing capacity by probe rod and static cone penetrometer testing every 10-feet of wall length for entire Reinforced soil zone. Also use hand auger borings to a depth of 12-feet or the reinforcement length whichever is shorter, every 30-feet along the wall length at third points of the reinforcement length.
    d. For walls in excess of 20-feet tall, power auger holes with cone or SPT testing to depth equal to twice the wall height is required, every 50-feet of wall length or as required by the geotech to establish appropriate allowable bearing capacity, unless already performed in pre-Wall design geotechnical investigation. If there is soft soil, it should be done to the bottom of the soft soil layer.
5. Please note that the special inspector must notify the contractor of out-of-tolerance work. The inspector cannot observe or test and let out-of-spec work be covered. With all of the parameters established in the MSE wall specifications and the guidelines for testing frequency outlined above the geotechnical engineer can perform their role within those parameters.
6. The MSE wall shall be staked in the field and located as per the civil grading plan by a registered Georgia Surveyor. Stakes shall be placed on 25-foot intervals so as to identify location along the wall alignment with respect to geogrid placement and soil compaction tests.

4.0 CHANGES TO GEOSYNTHETIC REINFORCEMENT LAYOUT AND PLACEMENT

A. No changes to the masonry block or geosynthetic reinforcement layout, including but not limited to, length, geosynthetic type, or elevation shall be made without the expressed prior written consent of the wall design engineer.

5.0 SITE DRAINAGE

A. Backfill shall be graded a minimum of 2-percent away from the wall face and rolled at the end of each work day to prevent ponding of water on the surface of the reinforced soil mass. A berm at the crest of the wall shall be constructed at the end of each workday to prevent rainwater from overtopping the wall. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

B. Care shall be taken not to contaminate the filter fabric, unit fill, and/or the drainage composite with clay or other poor drainage material.

C. Drainage aggregate shall extend one foot (or as indicated on the detail drawings) behind the back of the masonry block units to alleviate the build up of possible hydrostatic pressure behind the masonry block units.

D. The engineering, design, analysis, detailing and mitigation of both surface drainage and seepage of groundwater shall be the responsibility of the owner or owner's representative.

6.0 GENERAL CONSTRUCTION NOTES

A. Construction shall conform to all state and local and manufacturers' requirements.

B. General or grading contractor is responsible for location and protection of underground utilities in the vicinity of the wall and for maintaining safe excavations and working conditions.

C. All utilities located within the reinforced zone are to be installed concurrently with the reinforced backfill placement.

D. All liquid carrying utilities located within the reinforced backfill are to be encased in a drainage aggregate and geotextile filter. All liquid carrying utilities located outside of, but within 100-feet of the reinforced backfill shall be water tight to prevent migration of water into the surrounding soils.

E. Wall elevation views and locations and geometry of existing structures must be verified by the owner or owner's representative prior to construction.

F. Backfill and compact in front of wall prior to exceeding 5.0-feet of wall height.

G. A copy of the design report and the wall drawings should be provided to future owners of the developed property to provide them with a record of the location of the reinforced zone and recommendations regarding permissible construction activities.

7.0 REPAIRING AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or if units do not match adjoining units.

B. Cleaning: Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2 applicable to type of stain on exposed surfaces.

C. Protection: Provide final protection and maintain conditions that ensure retaining walls are without damage and deterioration at time of Substantial Completion.

END OF SECTION

PLAN HOLDERS

Mulberry Park

Bid #-

11/21/2025

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