Technical Specifications for Stone Wall Rebuilding

1.0 Introduction

This is a Request for Proposals and will be evaluated on the basis of the relative merits of the proposal. This RFP states the instructions for submitting proposals and the procedures and criteria by which Construction, Landscaping, and Masonry Firms, henceforth referred to as Contractors, will be selected.

2.0 Instruction and Notification to Contractors

2.1 Review all sections of this Request carefully and follow instructions completely, as failure to make a complete submission as described elsewhere herein may result in rejection of the proposal.

2.2 All costs associated with developing or submitting a proposal in response to this Request shall be borne by the Contractor.

2.3 All materials submitted for consideration in response to this RFP will become the property of the Town unless alternative arrangements are made prior to submission.

3.0 Detailed Project Description

3.1 The Town of Groton Parks and Recreation Department is soliciting qualification statements from qualified firms or teams to perform the services as described below:

Reconstruction/rebuilding/repairs of approximately 175 linear feet of coursed dry stone wall in the Deerfield Subdivision using approved stone building practices as described in the scope of services.

Within the Deerfield Subdivision, dry stone walls are used as boundary markers between private and public property. Section of the stone walls will need to be rebuilt from the footing up.

3.2 A link to the map and pictures of the project area are included below: (Use control click).

http://gis.groton-ct.gov/StockMaps/Deerfield_Stonewall_Mapping.pdf

3.3 Definitions

Terminology for Dry Stone Walls as used in these specifications:

1. Footing: The prepared surface on which the wall is built

2. Foundation Stones: Large Stones in the bottom of the wall, forming the first course.
3. Lift: A portion of wall vertically above or below a course with through stones. The First Lift Starts on top of the foundation stones and goes up to the first course of through stones. The second lift is the next in height and so on. The number of lifts is determined by the height of the wall.
4. Through Stones: Long stones used to tie the face of the wall back to the stones behind. Through stones are typically placed in level courses with a specified horizontal distance between them. The courses of through stones define the top and bottom of the lifts.
5. Wall Stones: Stones seen in the face of the completed wall.
6. Backing Stones: Stones used behind the face stones to add mass and structure to the wall.
7. Pinning: Stones precisely placed to wedge wall stones in place.
8. Hearting: Stones used to fill voids between wall stones, backing stones, and pinning stones.
9. Cap Stones: Stones that make up the top course of the wall, covering the top of the final lift.
10. Top of Wall Width: Is defined by the top of the Cap Stones
11. Batter: Angle that the face of wall leans back. Typically described in a ratio of 'distance back' to 'height' such as 1:6.

4.0 Scope of Services

4.1 Rebuilding or reconstruction of existing coursed dry stone wall.

The Contractor shall provide all the necessary labor, equipment, safety equipment, to perform rebuilding or repairs to stone walls.

The Contractor shall rebuild or repair segments shown on attached map.

4.2 Delivery, Storage, Handling

Contractor shall prevent excessive ice, mud, soil, clay, and like materials that may adhere, from coming into contact with the stones. Such materials, if present on the stones, must be removed prior to building.

4.3 Footing Material

Drainage aggregate shall be clean angular stone, allowing water to freely pass through. Material must be stable and firm when compacted. Commonly available crushed stone aggregate in the size range of ¾" to 1 ½" is typically suitable, unless other specified by wall designer. In areas were the ground

freezes water must easily pass through the footing material and have a place to drain to well away from the wall. In areas were the ground freezes water must easily pass through the footing material and have a place to drain to well away from the wall.

4.4 Foundation Stones

All stones shall be placed with their length into the wall structure (perpendicular to the face of the wall). Stones should be placed such that the joints near the face of the wall are tight. The wall stones should be in contact with the wall stones on either side. Stones should be set level. To the greatest extent possible, stones of the same height should be placed next to each other to form an even horizontal course. The underside of the stone shall be free of voids and well packed with footing material. Stones shall be set so that the top edge of the face (portion of stone visible in completed wall) is in line with the plane of the wall.

Back stones of equivalent height and size to the foundation stones shall be placed behind the foundation stones. The length of each back stone shall be placed perpendicular to the face of the wall. Pinning and hearting shall be carefully placed by hand to fill all voids and gaps between all foundation stones and back stones. Fewer larger pieces should be used rather than many small pieces.

4.5 Wall Stones First lift

All stones shall be placed with their length into the wall structure (perpendicular to the face of the wall). Stones must span the vertical joints between stones in the course below. Each stone spanning a joint must have at least 1/3 of its width to either side of the joint, and must have contact with and bear weight on both wall stones below. Wall stones should not be placed to sit on more than two wall stones in the course below. Stones should be set level. To the greatest extent possible, stones of the same height should be placed next to each other to form an even horizontal course.

Stones should be placed so that joints near the face of the wall are tight. The wall stones should be in contact with the wall stones on either side. Stones shall be set so that the farthest protrusion on the face of the stone is in line with the plane of the wall. All stones shall be sound and free of cracks or defects that would interfere with the placement or performance of the stones. Stones should be placed such that there is 3 to 4 points contact with the stone course below. At least two points of contact must be made near front face of the wall. Back stones of equivalent height and size to the wall stones shall be placed behind the wall stones. The length of each back stone shall be placed perpendicular to the face of the wall. Pinning and hearting shall be carefully placed by hand to fill all voids

and gaps between all wall stones and back stones. Lift height is determined to be whichever distance is greater: up to 30 inches or up to two courses.

4.6 Through Stones

Through Stones are placed on the top of each Lift. Shall be placed no farther apart horizontally than whichever is the greater distance: 3 ft. when measured center to center or two Wall stones between each Through Stones. Shall be tightly pinned and hearted beneath so there are no voids. Shall be placed on the wall so they extend all the way through the wall. Should be set so that the length of the stone is approximately perpendicular to the face of the wall. Should be set level. Through Stones must span the vertical joints between stones in the course below. Each stone spanning a joint must have at least 1/3 of its width to either side of the joint, and must have contact with and bear weight on both wall stones below. Through Stones of successive lifts should be placed such that they are centered between the Through Stones on the previous lift.

4.7 Wall stones 2nd and additional lifts

Shall follow all specifications in Section 4.5 – (Wall Stones/First Lift)

4.8 Pinning and Hearting

Shall be placed by hand to fill the voids between other stones. Shall not be placed (pushed in) from the front face of the wall. Pinning stones shall be placed from the interior of the wall. Each void should be placed with the fewer larger stones, rather than many small ones. Shall be placed to securely wedge all other stones in the wall tightly together. Shall not be placed so that downward force will push wall stones out of the wall.

4.9 Cap Stones

Shall be placed so they cover the full width of the top of the wall. Cap Stones should be placed so the vertical joints between the stones are not over vertical joints in the course below. Cap Stones shall be placed so they do not tip or shift when weight is applied to the top. Cap stones should be set so the top of the stones are even, creating a smooth top of the wall. Cap stones should be set level (from the front to the back of the wall). Voids below Cap Stones shall be tightly filled with pinning and hearting stones. Cap Stones should not sit up on pinning stones at the face of the wall. The Cap Stones should make contact with the wall stones. Mortar all stone caps with stone colored mortar, mortar shall not be visible.

4.10 Batter

Batter both sides of the wall front and back 1 inch per vertical foot.

5.0 Staging/Work area

5.1 Work is to be performed on the Town of Groton side of the stone wall when possible. The Town will notify adjacent private property owners when work is to take place on the stone wall adjacent to their property. Any repairs/reconstruction requiring the use of equipment beyond hand tools must be done from the Town of Groton side of the stone wall.

5.2 All excess material resulting from excavation and construction shall be properly disposed of off-site. No material shall be placed beyond the limits of construction or within wetland areas. Stockpiling of building material shall be confined within the area of construction disturbance. Material stockpile shall be maintained in a safe and workman like manner.

5.3 Vehicular movement shall be limited to established construction access points and parking areas. Unnecessary encroachment of construction equipment or other vehicles shall not be allowed in non-construction portions of the property. Vehicular access to areas outside the areas of disturbance shall be restricted to the minimum necessary to perform essential and required construction activities.

5.4 Proper erosion controls will be established and maintained throughout the project to ensure that no soil leaves the site.

5.5 Damage to the grass area surrounding the stone wall caused by vehicles or equipment shall be filled with approved topsoil, fine raked and seeded.

6.0 Work Documentation

Contractor shall submit detailed photographic or video documentation of the project from start to completion. This report is to verify correct building techniques.

Document to include the following points:

- Site before any work has begun
- Prepared sub grade (if necessary)
- Foundation Stone Placement
- Completed First Lift
- Through Stones Placement
- Completed Second Lift

- Completed Structure

7.0 Scheduled work hours

The Town of Groton scheduled work hours are from 7:30 AM to 3:30 PM Monday through Friday, except holidays. The Contractor shall work during these days and hours only. If there is a need to work outside of these days or hours The Contractor shall request permission from The Town of Groton.

8.0 Permits and Work plan

The Contractor shall submit a proposed work schedule within two (2) weeks after the awarding of the contract.

9.0 Submission Requirements

9.1 Background statement on the firm, including a brief history of same, discipline capabilities, principals, staff availability, location, and financial stability.

9.2 Qualifications and position with the firm of individuals who will be assigned to the project. Include resumes of key personnel. This section should also address general availability of key personnel.

9.3 List of project(s) similar to the Deerfield Stone wall project and reference names, addresses, and phone numbers.

9.4 Detailed statement including the organizational structure under which the firm proposes to conduct business. The relationship to any parent or subsidiary firm, with any of the parties concerned must be clearly defined. In the case of multiple firms, the "firm of record" and the party responsible for coordination shall be identified.

9.5 Proposed sub-consultants shall be clearly identified and the principal contact listed.

9.6 Concluding statement as to why your firm is the best qualified to meet the needs of the Town and why your firm should be selected. Also include in the statement how the firm would approach the project.

Section 10.0 – Submission Format

10.1 Technical questions should be directed to Mark Berry, Parks and Recreation Director via e-mail at mberry@groton-ct.gov via telephone at 860-536-5680.

10.2 An original and five (5) copies of the proposal should be mailed or hand delivered to:

John Piacenza –Purchasing Agent
45 Fort Hill Road
Groton, CT 06340

11.0 – Selection of Contractors

11.1 The Town will review the qualifications received.

11.2 The contractor selected will be chosen on the basis of qualifications.

11.3 All negotiations will be confidential until a contract has been executed.