City of Portsmouth
Department of Public Works
April 17,2006
Addendum #1
Bid Proposal #57-06

New Castle Avenue Project

This Addendum forms part of the original document marked Bid #57-06 New Castle Avenue Roadway from Marcy Street to the Bridge over the Piscataqua River Inlet and Seawall Project

The following Sub-Sections were inadvertently excluded from the original bid specifications. They shall be included as part of the original bid specifications.

Special Provision Section 670 Miscellaneous Incidentals Item 670.G Seawall Sub-Section 670.6.G – Precast Concrete Seawall System and Sub-Section 670.6.H Scenic Overlooks (Bid Alternate)

Acknowledge receipt of this addendum within your proposal, failure to do so may subject a bidder to disqualification.

SPECIAL PROVISION

SECTION 670 - MISCELLANEOUS INCIDENTALS
Item 670.6 – Seawall

SUB-SECTION 670.6.G – Precast Concrete Seawall System

Description

1.1 The work under this sub-section shall consist of furnishing and installing all labor and materials or components as required to install an architecturally faced precast concrete roadway retaining seawall system to include: supplementary excavation (outside of demolition limits of existing seawall and sidewalk), subgrade preparation, cast-in-place concrete footing, segmental precast concrete retaining wall system, backfill as required for the wall system and capslab subgrade, cast-in-place cap-slab/sidewalk, and all related incidental work as shown on the plans or as ordered.

1.2 The Contractor and/or Precast Concrete Seawall Supplier shall perform site visit(s) as needed prior to bid preparation to familiarize with and/or field verify the existing conditions to the extent that all incidental work required to complete the design, fabrication, and installation of the precast concrete wall system is included in the base bid.

1.3 The face of the Precast Concrete Seawall System shall be designed as vertically plumb. The alignment of the top of the wall shall be held consistent with respect to the offset from the roadway alignment baseline as shown on the General Plans, and the base of the wall may not extend beyond the vertical downward projection of that point due to wetlands impact restraints. The Precast Concrete Seawall Supplier shall include provisions and or modifications to standard system components if required to facilitate this site/design constraint.

1.4 The work to be provided under this Sub-Section specifically does NOT include the following:

1. Relocation of existing private boat docks
2. Relocation or demolition of exiting utilities and/or drainage facilities.
3. Demolition of the exiting seawall or surrounding sidewalks, curbing, fencing etc
4. Excavation shoring/sheet piling/cribbing etc.
5. Cofferdams and Dewatering
6. Temporary facilities, erosion protection, traffic control
7. Granite roadway curbing (anchorage for the curbing shall be cast into the seawall capslab under the precast concrete seawall system work)
8. Any other work described, included in, or incidental to the other Sub-Sections of the Special Provision Specifications for item 670.6 – Seawall.
9. The Contractor and Precast Concrete Seawall System manufacturer should make specific note of the separately specified but closely related requirements for the Bid Alternate for Scenic Overlooks described in Sub-Section 670.6.H. All additional work required

pertaining to the seawall as a result of the addition of the Scenic Overlooks shall be accounted for in the Bid Alternate pricing and NOT in the Base Bid.

1.5 The Precast Concrete Seawall System Supplier/Manufacturer shall provide a complete segmental precast wall system with elements designed and fabricated to suit this project application with considerations for long-term durability under the tidal salt-water marine exposure conditions of this site. The Precast Concrete Seawall System shall be designed and constructed such that the stability of the seawall will not be jeopardized by buoyancy effects of tidal water higher than normally anticipated conditions.

1.6 The Seawall footing shall be sized and designed by the seawall supplier to suit the specific precast wall system being proposed. Geotechnical information for the manufacturer's design qualification of the precast retaining wall system components and configuration has been provided in APPENDIX 1 of the Item 670.6 – Seawall specification.

1.7 The Precast Concrete Seawall System shall include in the base bid, all design provisions, coordination, and adjustments as needed during fabrication or field installation for special localized conditions related to the close proximity of catch basins and piping, and all incidental work required to facilitate the installation of the proposed storm water drainage system catch basins and outfalls as shown on the General Plan. These provisions include, but are not limited to, design and installation of localized modifications or reinforcement of the precast wall panels (if required), and storm water drainage system piping penetrations through the wall which shall be sealed watertight such that migration in either direction of seawater or backfill fines through the penetration is physically prevented.

1.8 The existing overhead utility lines will be temporarily relocated to the other side of the street during seawall construction, and then will be re-installed on the seawall side of the street within the seawall capslab envelope. The utility pole work is NOT part of the work included in the seawall items. The Contractor shall provide all coordination with the utility company for the utility poles embedment depth, locations, and installation details as they pertain to the precast concrete wall and the cast-in-place capslab. The Precast Concrete Seawall System shall include in the base bid, all design provisions, coordination, and adjustments as needed during fabrication or field installation for special localized conditions related to the close proximity and construction sequence of the future utility pole locations. This would include utility pole embedment sleeves, capslab block-outs, or other means as determined by the contractor and seawall system manufacturer to facilitate the installation of the utility poles after the seawall and capslab construction is complete.

1.9 The Precast Concrete Seawall System shall include in the base bid, all design provisions, coordination, and adjustments as needed during fabrication or field installation to facilitate the uniform thickness and consistent appearance of the seawall capslab, which may include special casting or cutting of top course precast units to suit changing grade conditions. Contractor shall include provisions for adjustments to the configuration of the bottom side of the cast-in-place capslab to provide an interlocking transition between the capslab and the precast concrete wall units in the base bid.

1.10 The owner may choose to install up to 3, cantilevered concrete Scenic Overlook areas along the length of the Seawall as a Bid Alternative designated as Item 670.6.H – Scenic Overlooks. All costs for the additional provisions for the design of the scenic overlook support interface with the Precast Concrete Seawall System, coordination, and adjustments as needed during fabrication or field installation to facilitate the installation of the Scenic Overlooks shall be included in the Bid Alternative Item 670.6.H and NOT in the Base Bid for the Precast Concrete Seawall System provided under this Special Provision Subsection.

Materials

2.1 Unless otherwise modified in this Special Provision, supplementary Special Provision Specifications (attached), or the plans, all work, materials, submittals, and certifications shall conform to the requirements of the pertinent NHDOT Standard Specifications for Road and Bridge Construction (latest edition). Any materials required for the completion of all work and not addressed in the special provisions, construction drawings, or standard specifications shall be in accordance with best industry standards and practices, for which all pertinent product data shall be submitted to the site engineer for approval prior to procurement of the subject materials.

2.2 Where applicable, all materials shall be selected from the NHDOT Qualified Products List (latest edition) unless specifically noted on the drawings, special provisions, or called for in the field upon approval of the site engineer.

2.3 The Precast Concrete Seawall System shall be a comprehensive system as designed by the manufacturer's representative(s) and furnished and installed in accordance with all of the manufacturer's recommendations for this site and application. Precast wall system shall be ; T-Wall Retaining Wall System as manufactured under local license from THE NEEL COMPANY Engineered precast Products, Springfield, VA ; Stone Strong Retaining Wall System as manufactured under local license from Stone Strong Systems, Inc, Lincoln, NE ; or Approved Equal. Segmental precast concrete wall units shall be fabricated using the following materials, unless approved otherwise:

2.3.1 Precast Concrete shall have a minimum compressive strength of 4000 psi.

2.3.2 In order to extend the precast concrete's service life for the tidal saltwater marine exposure of this project, all concrete for precast concrete wall elements shall contain a waterproofing and corrosion protection chemical admixture for permeability reduction providing increased durability and chloride ion corrosion resistance. Permeability reduction admixture shall be; IPANEX as manufactured by Cement Chemistry Systems, LP, of Philadelphia, PA ; MOXIE 1800 SUPER-ADMIX as manufactured by Moxie International Inc. of Sacramento, CA. ; or Approved Equal.

2.3.3 In order to provide uniform wall color appearance, all concrete for the precast concrete wall elements shall be integrally colored using a powdered or liquid pigment specifically

recommended by the pigment manufacturer for use in precast concrete. The faces of the precast concrete wall elements shall also be sealed with a concrete cure/sealer compound as recommended by, and of the same manufacture as, the concrete pigment. Concrete pigment color shall be a medium to dark grey to simulate natural granite and shall be as selected by the owner from the pigment manufacturer's available colors. Contractor shall submit all pigment and sealer product data and color selection information to the owner for approval as soon as available, and provide up to 2 weeks for owner reviews and selection. Subsequent to color selection, a precast concrete color sample shall be prepared and delivered to the owner for approval. The contractor, at no expense to the owner, shall correct any distinctive color shade variations within the final seawall installation as directed by the owner. Integral concrete color pigment shall be ; Hyrotint or Mix-Ready as manufactured by Davis Colors, Inc, Beltsville, MD ; Precision-Pac Color For Concrete as manufactured by Alabama Pigments Company, LLC, McCalla, AL; or Approved Equal.

2.3.3.1 The contractor shall provide an alternate pricing differential for the precast concrete seawall system utilizing a field-applied concrete stain in lieu of the integral concrete coloring included in the base bid as described above. The concrete stain shall be the precast concrete wall system manufacturer's standard stain materials and colors and shall be installed in accordance with the manufacturer's instructions. Contractor shall submit all stain and sealer product data and color selection information to the owner for approval as soon as available, and provide up to 2 weeks for owner reviews and selection. The owner shall, at sole discretion, direct the contractor to proceed with the chosen method of wall color application upon review of the precast wall pigment and stain product submittals. Subsequent to color selection, a precast concrete color sample shall be prepared and delivered to the owner for approval utilizing the chosen method of color application.

2.3.4 Precast concrete wall elements shall have an architectural textured face pattern to simulate an ashlar granite stone appearance to be created by form-liners in the precast wall element forms. Face patterns shall be selected by the owner from the manufacturer's standard molds.

2.3.5 Contractor shall provide advance product data submittals for the proposed Precast Concrete Wall System with a 24"x36" photographic or computer-simulated graphic representation of the finished appearance of the owner-approved architectural wall face pattern and color, prior to wall unit fabrication. A mock-up panel of the selected precast wall face is NOT required.

2.3.6 Reinforcing steel shall have minimum yield strength of 60,000 psi. All reinforcing steel shall be either, epoxy coated in accordance with NHDOT Standard Specifications, or hot-dipped galvanized in accordance with ASTM A641, at the precast concrete wall system manufacturer's option. Reinforcing steel shall be installed with a minimum cover of 2". Welded wire reinforcement (WWR) shall be epoxy coated in accordance with

ASTM A884 or hot-dipped galvanized in accordance with ASTM A641, and shall be fabricated and installed in accordance with the Manual of Standard Practice for Structural Welded Wire Reinforcement (latest edition) as published by the Wire Reinforcement Institute (WRI). The contractor shall indicate the type of reinforcing steel corrosion protection included in the base bid in the bid submittal.

2.3.7 All horizontal and vertical joints in the segmental precast concrete wall system shall be sealed watertight such that migration in either direction of seawater or backfill fines through the joints is physically prevented even if wall elements were to shift due to small thermal movements. Mastic or other appropriate joint filler material shall be installed between the wall elements, and geotextile/filter fabric shall be installed behind the wall element joints. Joint filler materials shall be as specified and as detailed by the wall system manufacturer for their system. The contractor at no cost to the owner shall replace joints exhibiting signs of, or potential for, backfill migration.

2.3.8 The Precast Concrete Seawall System shall include adequate groundwater weep drains to allow groundwater discharge from behind the wall. Weep drains shall be schedule 80 PVC pipe with a minimum diameter of 4", and shall be spaced at a maximum of 10 feet center to center. The weep drains shall be spaced closer as needed if the wall system components configuration creates soil compartments behind the wall that may inhibit groundwater drainage flow to the weep drains. Weep drains shall be placed such that the discharge invert elevation is 4" above finished grade sloping away from the wall face. Weep drain pipe penetrations through the precast wall elements shall be sealed watertight such that migration in either direction of seawater or backfill fines through the penetration is physically prevented by a pipe sleeve collar or other approved means. Weep drains shall have an in-line backflow prevention device such as a Slip-In Elastomer Check Valve, Series 37-G as manufactured by the Redvalve Co. ; or Approved Equal. Refer to seawall design drawings for related information.

2.3.9 Contractor shall submit shop drawings and working installation drawings for the complete wall system and precast wall units to the owner (in accordance with the NHDOT Standard Specifications for Road and Bridge Construction) for specifications conformance review prior to fabrication.

2.3.10 All the wall elements shall be uniformly fabricated and installed using the same materials consistently from beginning to end.

Construction Requirements

3.1 Unless otherwise modified in this Special Provision, supplementary Special Provision Specifications, or the plans, the performance of all work shall conform to the construction requirements of the pertinent NHDOT Standard Specifications for Road and Bridge Construction (latest edition). Construction requirements including the fabrication, painting, transportation, and erection / installation of any components required for the completion of all work and not addressed in the special provisions, construction drawings, or NHDOT

Standard Specifications for Road and Bridge Construction (latest edition) shall be in accordance with best industry standards and practices.

3.2 For additional construction requirements for the precast concrete retaining wall system refer to the manufacturer's installation manuals and all project specific recommendations that shall be provided in writing by the manufacturer's representative, which shall be submitted, to the owner prior to the start of seawall construction.

3.3 All vertical and horizontal erection tolerances for the placement of the precast wall elements and joint alignments shall conform to the more restrictive requirements of either of the following, unless approved otherwise:

1. The tolerances specified in manufacturer's standard installation manual and/or construction requirements.
2. 1/16" per foot horizontal (leveling) ; 1/16" per foot vertical (plumb) ; +/- 3/8" of alignment at adjacent joint lines, and +/- 1" of the theoretical wall face line of the top of the wall at any point along the wall.

Any adjustments or corrective compensations to stay within tolerance limits shall be made in a gradual manner, such that changes in the alignment of any segmental unit or group of units are not visible.

3.4 The construction requirements of the other Sub-Sections of Special Provision Specification 670.6 – Seawall shall be considered relevant and applicable to the construction requirements for the Precast Concrete Seawall System described herein, and shall be reviewed and coordinated accordingly by the Contractor and the Precast Concrete Seawall System Supplier/Manufacturer.

Method of Measurement

4.1 670.6.G – Precast Concrete Seawall System, inclusive of all appurtenances, will be measured as a unit. Approximation of progress for the work shall be based on the aggregate square footage of the face area of completed seawall segments as described in this Sub-Section.

Basis of Payment

5.1 The Precast Concrete Seawall System will be subsidiary to the accepted Item 670.6 - Seawall and will be paid for at the contract lump sum price.

Pay items and units:

The Precast Concrete Seawall System shall be subsidiary to Item 670.6 - Seawall

End of Section

SPECIAL PROVISION

SECTION 670 - MISCELLANEOUS INCIDENTALS
Item 670.6 – Seawall

SUB-SECTION 670.6.H – Scenic Overlooks (BID ALTERNATE)

Description

1.1 The work under this sub-section shall consist of furnishing and installing all labor and materials or components as required to install up to three (3) cast-in-place concrete or precast concrete scenic overlook areas along the length of the seawall as shown on the plans or as ordered.

1.2 The owner may choose to install up to 3, cantilevered concrete Scenic Overlook areas along the length of the Seawall as a Bid Alternative designated as Item 670.6.H – Scenic Overlooks. All costs for the additional provisions for the design of the scenic overlook support interface with the Precast Concrete Seawall System, coordination, and adjustments as needed during fabrication or field installation to facilitate the installation of the Scenic Overlooks shall be included in this Bid Alternative Item 670.6.H and NOT in the Base Bid for Item 670.6.G – Precast Concrete Seawall. System.

1.3 The scenic Overlooks may be cast-in-place concrete or a combination of cast-in-place concrete and precast concrete elements at the contractor's option and as approved by the engineer provided that the overlooks meet all the requirements of the project specifications and all applicable codes and standards. If the Scenic Overlooks are proposed to be comprised of precast concrete elements, they must be assembled to provide a uniform appearance of a cast-in-place slab to match the adjacent cast-in-place concrete seawall capslab.

1.4 The Scenic overlooks shall be configured as shown on the plans with considerations for the installation of one (1) Observation Bench at each Scenic overlook location as described in Sub-Section 670.6.D – Scenic Overlook Observation Benches (Bid Alternate).

1.5 Under this item, the Contractor and the Precast Concrete Seawall System Manufacturer shall be responsible for the design of the interface for support of the Scenic Overlooks by the Precast Concrete Seawall System and its footing as applicable.

1.6 The Scenic Overlooks and the corresponding supporting interface to the Precast Concrete Seawall System and foundation shall be designed to safely support the following loads:

1. The self-weight of the cantilevered concrete overlook in addition to, 250 Pounds per Square Foot of uniformly distributed live load over the entire overlook, and the Ornamental Railing.
2. The self-weight of the cantilevered concrete overlook in addition to, One (1) H20-44 wheel load, to be located at 1-foot inwards from the outer edge of the cantilevered

overlook slab, with appropriate impact factors considered.

3. Buoyancy effects on the supporting section of seawall shall be considered when designing the scenic overlook support interface and corresponding stability of the Precast Concrete Seawall System.

All stability and structural design calculations for the scenic overlook concrete slab, slab support interface, and the respective supporting section of seawall shall be performed in accordance with the Strength Design Method of the AASHTO Standard Specifications for Highway Bridges, NHDOT Standard Specifications for Road & Bridge Construction, and the State of New Hampshire Building Code (IBC 2000) as applicable. The design calculations performed by contractor for the Scenic Overlooks and their interaction with the Precast Concrete Seawall System shall be submitted to the owner for general review a minimum of 4 weeks prior to the commencement of seawall construction.

1.7 The small amount of additional Ornamental Railing that will be required to flare out along the perimeter of the Scenic Overlooks shall be included in this Bid Alternate Item.

1.8 This Item shall include all incidental work or modifications required to the Base Bid in order to facilitate the complete installation of the Scenic Overlooks Bid Alternate Item, unless specifically noted otherwise.

Materials

2.1 Unless otherwise modified in this Special Provision, supplementary Special Provision Specifications (attached), or the plans, all work, materials, submittals, and certifications shall conform to the requirements of the pertinent NHDOT Standard Specifications for Road and Bridge Construction (latest edition). Any materials required for the completion of all work and not addressed in the special provisions, construction drawings, or standard specifications shall be in accordance with best industry standards and practices, for which all pertinent product data shall be submitted to the site engineer for approval prior to procurement of the subject materials.

2.2 Where applicable, all materials shall be selected from the NHDOT Qualified Products List (latest edition) unless specifically noted on the drawings, special provisions, or called for in the field upon approval of the site engineer.

2.3 Precast Concrete for the Scenic Overlooks or portion thereof, if pursued by the contractor, shall be designed and supplied by the same manufacturer as the precast Concrete Seawall System provided under Sub-Section 670.6.G, and shall be a comprehensive integral system.

2.3.1 Precast Concrete shall have a minimum compressive strength of 4000 psi.

2.3.2 In order to extend the precast concrete's service life for the tidal saltwater marine exposure of this project, all concrete for precast concrete wall elements shall contain a waterproofing and corrosion protection chemical admixture for permeability reduction providing increased

durability and chloride ion corrosion resistance. Permeability reduction admixture shall be; IPANEX as manufactured by Cement Chemistry Systems, LP, of Philadelphia, PA ; MOXIE 1800 SUPER-ADMIX as manufactured by Moxie International Inc. of Sacramento, CA. ; or Approved Equal.

2.3.3 Reinforcing steel shall have minimum yield strength of 60,000 psi. All reinforcing steel shall be epoxy coated in accordance with NHDOT Standard Specifications. Reinforcing steel shall be installed with a minimum cover of 2".

2.3.4 All horizontal and vertical joints in the precast concrete system shall be sealed watertight such that migration in either direction of seawater or backfill fines through the joints is physically prevented even if elements were to shift due to small thermal movements. Mastic or other appropriate joint filler material shall be installed between the elements, and geotextile/filter fabric shall be installed behind the element joints as needed. Joint filler materials shall be as specified and as detailed by the precast system manufacturer for their system. The contractor at no cost to the owner shall replace joints exhibiting signs of, or potential for, backfill migration.

2.4 Contractor shall submit shop drawings and working installation drawings for the complete cast-in-place concrete or precast concrete scenic overlook system to the owner (in accordance with the NHDOT Standard Specifications for Road and Bridge Construction) for approval and specifications conformance review prior to commencement of seawall construction.

Construction Requirements

3.1 Unless otherwise modified in this Special Provision, supplementary Special Provision Specifications, or the plans, the performance of all work shall conform to the construction requirements of the pertinent NHDOT Standard Specifications for Road and Bridge Construction (latest edition). Construction requirements including the fabrication, painting, transportation, and erection / installation of any components required for the completion of all work and not addressed in the special provisions, construction drawings, or NHDOT Standard Specifications for Road and Bridge Construction (latest edition) shall be in accordance with best industry standards and practices.

3.2 The construction requirements of the other Sub-Sections of Special Provision Specification 670.6 – Seawall shall be considered relevant and applicable to the construction requirements for the Precast Concrete Seawall System described herein, and shall be reviewed and coordinated accordingly by the Contractor and the Precast Concrete Seawall System Supplier/Manufacturer.

Method of Measurement

4.1 670.6.H – Scenic Overlooks (Bid Alternate), inclusive of all appurtenances, shall be measured as each overlook location being a unit.

Basis of Payment

5.1 The Scenic Overlooks, if selected by the owner, shall be subsidiary to the accepted Item 670.6 - Seawall and will be paid for at the contract Bid Alternative unit price for the number of Scenic Overlooks installed which shall be added to the Lump Sum Base Bid Price of Item 670.6 – Seawall.

Pay items and units:

The Precast Concrete Seawall System shall be subsidiary to Item 670.6 - Seawall

End of Section