



TOWN OF
NORTH KINGSTOWN, RHODE ISLAND

DEPARTMENT OF PUBLIC WORKS
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NORTH KINGSTOWN, R.I. 02852-5762
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May 9, 2016
ADDENDUM #4

INVITATION FOR BIDS
BOAT RAMP, ALLEN HARBOR

1. **Bid Due Date:** The town **is** issuing an extension to the bid due date. Bids are due no later than **May 16, 2016 @ 10:00am** at the Department of Public Works at 2050 Davisville Road, North Kingstown, RI.
2. **Technical Specifications:** Attached please find Technical Specifications for this project. They have been issued to be utilized for information in addition to the project plans and notes dated March 9, 2016.
3. **General Conditions:** The general conditions in the initial bid offering have been collated for the bidder's convenience and attached to this addendum.
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PROJECT
TECHNICAL SPECIFICATIONS

**BOAT RAMP IMPROVEMENTS
TOWN OF NORTH KINGSTOWN
ALLEN HARBOR MARINA**

PROJECT SPECIFICATIONS

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PAYMENT

1.1 DESCRIPTION:

- A. Payment for specified items:
 - 1. Payment for work performed as part of these technical specifications shall be included in the lump sum bid and paid according to an agreed upon schedule of values based on percentage complete.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, Bid Documents along with Contents A through I and attachments 1 through 10.
 - 2. All subsequent addendums.

SECTION 02010
SUBSURFACE INVESTIGATION

1.2 DESCRIPTION:

A. Soil data:

1. The soil boring log attached to Addendum 1 is for general information purposes. It is the Contractor's sole responsibility to make interpretations and draw conclusions with respect to the character of the material to be encountered and their impact upon the work based on the Contractor's knowledge of the area and of construction techniques. Neither the Owner nor the Architect/Engineer assumes responsibility for the accuracy of the data other than at the locations and times that the subsurface explorations were made.

2. It is the obligation of the Contractor to examine the site, to verify all dimensions in the field, to review any pertinent data available, and to employ all other means at his or her disposal to become familiar with the conditions at the site. The Contractor may, at his or her own expense, perform additional borings or explorations as he or she deems necessary.

*****END OF SECTION*****

SECTION 02070
SELECTIVE DEMOLITION

PART 1 - GENERAL:

1.1 DESCRIPTION:

- A. Work included: Carefully demolish and remove from the site those items scheduled to be demolished and removed, which include, but are not limited to:
 - 1. Two existing concrete boat ramps
 - 2. Sloped section of the existing pier

- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, Bid Documents along with Contents A through I and attachments 1 through 10.
 - 2. All subsequent addendums.

1.2 QUALITY ASSURANCE:

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

- B. All work performed under this section shall be done in a cautious manner. Any debris which falls into the waterway shall be immediately and completely removed.

PART 2 - PRODUCTS:

(NO PRODUCTS ARE REQUIRED IN THIS SECTION)

PART 3 - EXECUTION:

3.1 SURFACE CONDITIONS:

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 DEMOLITION:

- A. By careful study of the Contract Documents, determine the location and extent of selective demolition to be performed.

- B. In company with the Architect/Engineer, visit the site and verify the extent and location of selective

demolition required.

1. Carefully identify limits of selective demolition.
 2. Mark interface surfaces as required to enable workmen also to identify items to be removed and items to be left in place intact.
- C. Prepare and follow an organized plan for demolition and removal of items.
1. Completely remove items scheduled to be so demolished and removed, leaving surfaces clean, solid, and ready to receive new materials specified elsewhere.
 2. In all activities, comply with pertinent regulations of governmental agencies having jurisdiction.
- D. Demolished material shall be considered to be property of the Contractor and shall be completely removed from the job site. All demolition debris shall be removed from the site and disposed at a facility licensed to accept such material.

3.3 REPLACEMENTS:

- A. In the event of demolition of items not so scheduled to be demolished, promptly replace such items to the approval of the Architect/Engineer and at no additional cost to the Owner.

*******END OF SECTION*******

SECTION 02220
EXCAVATING, BACKFILLING, AND COMPACTING

PART 1 - GENERAL:

1.1 DESCRIPTION:

- A. Work included: Excavate, backfill, compact, and grade the site to the elevations shown on the Drawings, as specified herein, and as needed to meet the requirements of the construction shown in the Contract Documents.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, Bid Documents along with Contents A through I and attachments 1 through 10.
 - 2. All subsequent addendums.

1.2 QUALITY ASSURANCE:

- A. Use adequate numbers of workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Use equipment adequate in size, capacity, and numbers to accomplish the work in a timely manner.
- C. In addition to complying with requirements of governmental agencies having jurisdiction, comply with the directions of the Architect/Engineer.

1.3 PRODUCT HANDLING:

- A. Comply with pertinent provisions of Section 01640.

PART 2 - PRODUCTS:

2.1 SOIL MATERIALS:

- A. Fill and backfill materials:
 - 1. Use crushed stone as specified below and shown on the Drawings.

2.2 CRUSHED STONE

- A. Provide crushed stone under the slabs as indicated on the Drawings. The stone used shall be durable crushed rock consisting of the angular fragments obtained by breaking and crushing solid or shattered natural rock and free from thin, flat, elongated, or other objectionable pieces. All stone shall be clean, washed stone of either 2" or ½" in size, as indicated in the Drawings, and shall be free of fines, soils, stone dust or debris.

2.3 RIP-RAP

Riprap shall be provided where indicated on the Plans, and in accordance with Section 920 of the RIDOT Standard Specifications, for a complete and proper installation.

- A. Riprap shall be composed of a well graded mixture down to the 1 inch size particle such that 50 percent of the mixture by weight shall be larger than the d-50 gradation as specified below. A well-graded mixture as used herein is defined as a mixture composed primarily of large stone sizes but with a sufficient mixture of other sizes to fill the progressively smaller voids between the stones.
- B. The material of riprap shall consist of broken stone produced from sound ledge or large boulders with at least three fractured faces on each particle and shall be free from overburden, spoil, shale, or organic material. The stone shall have a minimum density of 160 pounds per cubic foot. It shall be rectangular in shape with its minimum dimension not less than one third of the maximum dimension. The stone shall be hard, durable, angular, of such quality that it will not disintegrate on exposure to water or weathering, be chemically stable and it shall be suitable in all other respects for the purpose intended.
- C. Riprap shall have the following properties:

| NSA No. | Size Inches (square openings) | | |
|---------|-------------------------------|---------------|---------------|
| | 100% Passing | 0-50% Passing | 0-15% Passing |
| R-1 | 2 | 1 | No. 4 |
| R-2 | 4 | 2 | 1 |
| R-3 | 8 | 4 | 2 |
| R-4 | 14 | 7 | 4 |
| R-5 | 20 | 10 | 6 |
| R-6 | 26 | 13 | 8 |
| R-7 | 34 | 18 | 14 |
| R-8 | 50 | 24 | 18 |

- D. Bedding stone for Riprap as shown on the plans shall conform to the quality requirements of subsection M.10.03 in the RI Standard Specifications for Road and Bridge Construction, and shall conform to one of the following designations:

| NSA No. | Size Inches (square openings) | | |
|---------|-------------------------------|---------------|---------------|
| | 100% Passing | 0-50% Passing | 0-15% Passing |
| FS-1 | ½ | No. 16 | No. 50 |
| FS-2 | 2 | No. 4 | No. 16 |
| FS-3 | 6½ | 2.5 | No. 4 |

2.5 OTHER MATERIAL:

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect/Engineer.

PART 3 - EXECUTION:

3.1 SURFACE CONDITIONS:

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 PROCEDURES:

A. Utilities:

1. Unless shown to be removed, protect active utility lines shown on the Drawings or otherwise made known to the Contractor prior to excavating. If damaged, repair or replace at no additional cost to the Owner.
2. If active utility lines are encountered, and are not shown on the Drawings or otherwise made known to the Contractor, promptly take necessary steps to assure that service is not interrupted.
3. If service is interrupted restore service by repairing the damaged utility at no additional cost to the Owner.
4. If existing utilities are found to interfere with the permanent facilities being constructed under this Section, immediately notify the Architect/Engineer and secure his instructions.
5. Do not proceed with permanent relocation of utilities until written instructions are received from the Architect/Engineer.

B. Protection of persons and property:

1. Barricade open holes and depressions occurring as part of this Work, and post warning lights on property adjacent to or with public access.
2. Place traffic barrels with operating warning lights during hours from dusk to dawn each day from the time the existing ramp is removed and the new ramp is not yet complete. Traffic barrels shall also be installed at all times when the contractor's forces are not present on site.
3. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, washout, and other hazards created by operations under this Section.

C. Dewatering:

1. Do not dewater the hole without prior written authorization from the Owner and governmental agencies having jurisdiction.

- D. Use means necessary to prevent dust becoming a nuisance to the public, to neighbors, and to other work being performed on or near the site.

- E. Maintain access to adjacent areas at all times.

3.3 EXCAVATION:

- A. Perform excavating of every type of material encountered within the limits of the Work to the lines, grades, and elevations indicated and specified herein.
- B. Satisfactory excavated materials:
 - 1. Transport to, and place in, fill or embankment areas within the limits of the Work.
- C. Unsatisfactory excavated materials:
 - 1. Excavate to a distance below grade as directed by the Architect/Engineer, and replace with satisfactory materials.
 - 2. Include excavation of unsatisfactory materials, and replacement by satisfactory materials, as parts of the work of this Section.
- D. Disposal of dredged material:
 - 1. Disposal of all excavated material shall be on Site as determined by the Owner at the time of disposal.
- E. Excavation of rock:
 - 1. Where rocks, boulders, granite, or similar material is encountered, and where such material cannot be removed or excavated by conventional earth moving or ripping equipment, take required steps to proceed with the general grading operations of the Work, and remove or excavate such materials by means which will neither cause additional cost to the Owner nor endanger buildings or structures whether on or off the site.
 - 2. **Do not** use explosives without written permission from the Architect/Engineer.
- F. Excavate and backfill in a manner and sequence that will provide proper drainage at all times.
- G. Borrow:
 - 1. Obtain material required for fill or embankment in excess of that produced within the grading limits of the Work from borrow areas selected and paid for by the Contractor and approved by the Architect/Engineer.
- H. Unauthorized excavation:
 - 1. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific instruction from the Architect/Engineer.
 - 2. Under footings, foundations, or retaining walls:
 - a. Fill unauthorized excavation by extending the indicated bottom elevation of the footing or base to the excavation bottom, without altering the required top elevation.
 - b. When acceptable to the Architect/Engineer, lean concrete fill may be used to bring bottom elevations to the proper position.
 - 3. Elsewhere, backfill and compact unauthorized excavations as specified for authorized excavations, unless otherwise directed by the Architect/Engineer.
- I. Excavation for structures:
 - 1. In excavating for ramp slabs, take care not to disturb bottom of excavation.

- J. Excavating for pavements:
 - 1. Cut surface under pavements to comply with cross sections, elevations, and grades.
- K. Cold weather protection:
 - 1. Protect excavation bottoms against freezing when atmospheric temperature is less than 35 degrees F.

3.4 FILLING AND BACKFILLING:

- A. General:
 - 1. For each classification listed below, place acceptable soil material in layers to required subgrade elevations.
 - 2. In excavations:
 - a. Use satisfactory excavated or borrow material.
 - 3. Under asphalt pavement:
 - a. Use subbase materials.
- B. Backfill excavations as promptly as progress of the Work permits, but not until:
 - 1. Acceptance of construction below finish grade;
 - 2. Inspecting, testing, approving, and recording locations of underground utilities;
 - 3. Concrete formwork is removed;
 - 4. Shoring and bracing are removed, and voids have been backfilled with satisfactory materials;
 - 5. Trash and debris have been removed; and
 - 6. Horizontal bracing is in place on horizontally supported walls.
- C. Placing and compacting:
 - 1. Place crushed stone as specified in Section 03400 of these Specifications.

3.5 GRADING:

- A. General:
 - 1. Grade crushed stone as specified in Section 03400 of these Specifications.

3.6 COMPACTING:

- A. Provide not less than the following maximum density of soil material compacted at optimum moisture content for the actual density of each layer of soil material in place, and as approved by the Architect/Engineer.
 - 1. Pavements:
 - a. Compact the top 8" of subgrade and each layer of fill material or backfill material at 95% of maximum density for cohesive soil material.

3.7 FIELD QUALITY CONTROL:

- A. Secure the Architect/Engineer's inspection and approval of subgrades and fill layers before subsequent construction is permitted thereon.

***** **END OF SECTION** *****

02220-5

Section 02275
FILTER FABRIC

PART 1 - GENERAL

1.1 DESCRIPTION

All labor, materials, equipment and incidentals necessary to furnish and install all filter fabric as indicated on the plans and specified herein.

1.2 SUBMITTALS

Submit manufacturer's literature in accordance with the requirements as specified elsewhere.

PART 2 - PRODUCTS

2.1 NONWOVEN GEOTEXTILE

Filter fabric shall be Mirafi S1600, or approved equal. It shall be a nonwoven geotextile composed of polypropylene fibers which are formed into a stable network such that the fibers retain their relative position. The fabric shall be inert to biological degradation and naturally encountered chemicals, alkalis, and acids. The fabric shall meet or exceed the typical property values listed herein.

FABRIC PROPERTIES

| Mechanical Properties | Test Method | Unit | Minimum Average Roll Value |
|------------------------------|--------------------|-------------------------|-----------------------------------|
| Weight | ASTM D5261 | oz/yd ² | 16.0 |
| Thickness | ASTM D5199 | mils | 175 |
| Grab Tensile Strength | ASTM D4632 | lbs | 425 |
| Grab Tensile Elongation | ASTM D4632 | % | 50 |
| Trapezoidal Tear Strength | ASTM D4533 | lbs | 155 |
| CBR Puncture Strength | ASTM D6241 | lbs | 1200 |
| Apparent Opening Size | ASTM D4751 | U.S. Sieve | 100 |
| Permittivity | ASTM D4491 | 1/sec | 0.7 |
| Permeability | ASTM D4491 | cm/sec | 0.31 |
| Flow Rate | ASTM D4491 | gal/min/ft ² | 50 |
| UV Resistance (at 500 hours) | ASTM D4355 | % strength retained | 80 |

2.2 WOVEN GEOTEXTILE

Woven Geotextile shall be Mirafi HP570, or approved equal. It shall be composed of high-tenacity polypropylene yarns, which are woven into a network such that the yarns retain their relative position. The fabric shall be inert to biological degradation and resistant to naturally encountered chemicals, alkalis, and acids. The fabric shall meet or exceed the typical property values listed herein.

FABRIC PROPERTIES

| Mechanical Properties | Test Method | Unit | Minimum Average Roll Value |
|----------------------------------|--------------------|-------------------------|-----------------------------------|
| Tensile Strength (at ultimate) | ASTM D4595 | lbs/ft | 4800 |
| Tensile Strength (at 2% strain) | ASTM D4595 | lbs/ft | 960 |
| Tensile Strength (at 5% strain) | ASTM D4595 | lbs/ft | 2400 |
| Tensile Strength (at 10% strain) | ASTM D4595 | lbs/ft | 4800 |
| Factory Seam Strength | ASTM D4884 | lbs/ft | 3000 |
| Flow Rate | ASTM D4491 | gal/min/ft ² | 30 |
| Permittivity | ASTM D4491 | 1/sec | 0.4 |
| Permeability | ASTM D4491 | cm/sec | 0.05 |
| Apparent Opening Size | ASTM D4751 | U.S. Sieve | 30 |
| UV Resistance (at 500 hours) | ASTM D4355 | % strength retained | 80 |

PART 3 - EXECUTION

- A. Unroll the fabric over the prepared subgrade. Overlaps shall be complete in accordance with the manufacturer's recommendations but in no case shall they be less than 3'-0".
- B. Backdump aggregate onto the fabric, taking care not to drive equipment directly on the fabric.
- C. Spread the aggregate as required.

END OF SECTION

SECTION 02513
BITUMINOUS CONCRETE PAVING

PART 1 - GENERAL:

1.1 DESCRIPTION:

- A. Work included: Provide Bituminous concrete pavements, with appropriate preparation where indicated on the Plans, and in accordance with Part 400 of the RIDOT Standard Specifications, for a complete and proper installation.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, Bid Documents along with Contents A through I and attachments 1 through 10.
 - 2. All subsequent addendums.

1.2 QUALITY ASSURANCE:

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Obtain all asphalt mix products from a facility approved by the Rhode Island Department of Transportation to produce such materials.

1.3 SUBMITTALS:

- A. Comply with pertinent provisions of Section 01340.
- B. Product data: Within thirty (30) calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
 - 1. Materials list of items proposed to be provided under this Section;
 - 2. Certificates, signed by the materials producer(s) and the asphalt paving subcontractor, stating that materials meet or exceed the specified requirements, and the design mix for this project for approval.
 - 3. Name and address of asphalt supplier along with their DOT certification.

1.4 PRODUCT HANDLING:

- A. Comply with pertinent provisions of Section 01640 and Part 400 of the RIDOT Standard Specifications.

PART 2 - PRODUCTS:

All products shall meet the requirements of the RIDOT Standard Specification for Road and Bridge Construction, latest edition, as a minimum. Provide design mix formula to produce the expected finish pavements.

2.1 AGGREGATES:

- A. Provide base aggregates consisting of crushed stone, gravel, sand, or other sound, durable, mineral materials processed and blended, and naturally combined in accordance with Part 300 of the RIDOT Standard Specifications. Aggregates for **Gravel Borrow** shall be mixed in such proportions that the percentage by weight will be within:

| <u>Sieve sizes:</u> | <u>Percentage passing:</u> |
|---------------------|----------------------------|
| 3" | 60-100% |
| 1/2" | 50 - 85% |
| 3/8" | 45 - 80% |
| No. 4 mesh | 40 - 75% |
| No. 40 mesh | 0 - 45% |
| No. 200 mesh | 0 - 10% |

- B. Aggregates for bituminous concrete paving **Ramp Friction Course**: Provide a mixture of sand, mineral aggregate, and liquid asphalt mixed in such proportions that the percentage by weight will be within:

| <u>Sieve sizes:</u> | <u>Percentage passing:</u> |
|------------------------------|----------------------------|
| 3/4" | 100% |
| 1/2" | 95 - 100% |
| 3/8" | 70 - 100% |
| No. 4 mesh | 25 - 45% |
| No. 8 mesh | 20 - 35% |
| No. 30 mesh | 8 - 15% |
| No. 50 mesh | 5 - 12% |
| No. 200 mesh | 2 - 6% |
| Asphalt by weight | 5% to 7% |
| Marshall Stability | 750 |
| % Voids | Min. 5 |
| Flow (0.01in.) | 8-16 |
| Mixing Temperature (F) | 260 |
| Compaction #blows at ea. end | 50 |

- C. Aggregates for bituminous concrete paving **Base Course**: Provide a mixture of sand, mineral aggregate, and liquid asphalt mixed in such proportions that the percentage by weight will be within:

| <u>Sieve sizes:</u> | <u>Percentage passing:</u> |
|------------------------------|----------------------------|
| 1 ¼" | 100% |
| ¾" | 70-100% |
| ⅜" | 46-74% |
| #8 | 22-52% |
| #30 | 10-34 |
| #50 | 6-26% |
| #200 | 3-8% |
| Asphalt by weight | 4.0% to 6.5% |
| Marshall Stability | 1600 |
| % Voids | 3-8 |
| VFA | 60-75 |
| Flow (0.01in.) | 8-16 |
| Mixing Temperature (F) | 300 |
| Compaction #blows at ea. end | 75 |

No Recycled Asphalt Products (RAP) or other recycled bituminous, contaminated soils, or similar products shall be incorporated into the pavement mix.

2.2 ASPHALTS:

- A. Comply with provisions of AASHTO M 20
 1. Asphalt cement: RIDOT Standard Specifications Section M.03.06.

2.3 MIXING BITUMINOUS CONCRETE MATERIALS:

- A. Provide hot plant mixed Bituminous concrete paving materials.
 1. Temperature leaving the plant: 290 degrees F minimum, 320 degrees F maximum.
 2. Temperature at time of placing: 280 degrees F minimum.
 3. Mix in accordance with Part 400 of the RIDOT Standard Specifications.

PART 3 - EXECUTION:

3.1 SURFACE CONDITIONS:

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 SAW CUTTING AND PREPARATION OF NEW AND EXISTING PAVEMENT:

- A. Saw cut existing pavements for installation of new construction and pavements where indicated on the plans. Saw cutting shall be done on a pavement layer basis with the joints offset a minimum of

12" to lap all pavement layers. The widest saw cut shall be at the top and all pavement removal to the next layer shall be included to blend the courses to new and existing surrounding pavements.

3.3 FINAL PREPARATION OF SUBGRADES:

- A. After preparation of subgrade, thoroughly prepare the entire area to be paved, and then compact soils to smooth, hard, even surface of 95% of proctor density compaction to receive the aggregates and plant mix at soils areas. At areas of existing pavement to be overlaid prepare existing pavements and all areas of defective cracking and sub base settlement to provide a firm structural base for the finish pavement application. All work to be completed in accordance with the RI Standard Specification.

3.4 PLACEMENT OF BASE COURSES:

- A. Subbase (when required):
 - 1. Spread the specified subbase material to a thickness providing the compacted thickness shown on the drawings. Subbase Material shall be as shown on the Drawings or as specified herein.
 - 2. Compact subbase to 95% of proctor density at all areas.
- B. Base:
 - 1. Spread the specified base material to a thickness providing the compacted thickness shown on the Drawings. Gravel base shall be compacted in six inch (6") layers to grade or sub grade as applicable.
 - 2. Compact gravel to 95% of proctor density at all areas.
- C. Thickness tolerance: Provide the compacted thickness shown on the Drawings within a tolerance of minus 0.0" to plus 0.5".
- D. Smoothness tolerance: Provide the lines and grades shown on the Drawings within a tolerance of 1/4" in twelve feet.
 - 1. Deviations: Correct by removing materials, replacing with new materials, and reworking or recompacting as required.
- E. Moisture content: Use only the amount of moisture needed to achieve the specified compaction.

3.5 APPLICATION OF TACK COAT:

- A. Prepare and clean the surfaces to be paved. Prepare the material and distribution equipment for application. Apply in accordance with the manufacturer's recommendations, Asphalt Institute Recommendations, And RI Standard Specifications, as approved by the Architect/Engineer.
- B. Apply one coat of the specified tack coat, that may be covered on the same day with paving finishes.
- C. Achieve a finished surface coat which, when dry and thoroughly set, is smooth, tough, resilient, of uniform black color, and free from coarse textured areas, lap marks, ridges, and other surface irregularities. Assure that the tack coat is fully compatible with the pavement surfaces to be applied.

3.6 PLACEMENT OF BITUMINOUS CONCRETE SURFACE COURSE:

- A. Remove all loose materials from the compacted base.
- B. Apply the specified tack coat where required, and allow to dry, in accordance with the manufacturer's recommendations, the Asphalt Institute Recommendations, and RIDOT Standard Specifications, as approved by the Architect/Engineer.
- C. Receipt of Bituminous concrete materials:
 - 1. Do not accept material unless it is covered with a tarpaulin until unloaded, and unless the material has a temperature of not less than 280 degrees F.
 - 2. Do not commence placement of Bituminous concrete materials when the atmospheric temperature is below 50 degrees F, nor during fog, rain, or other unsuitable conditions.
- D. Spreading:
 - 1. Spread material in a manner which requires the least handling. Spread only with an approved mechanical spreader.
 - 2. Where thickness of finished paving will be 3" or less, spread in one layer.
- E. Rolling:
 - 1. After the material has been spread to the proper depth, roll until the surface is hard, smooth, unyielding, and true to the thickness and elevations shown on the Drawings.
 - 2. Roll in at least two directions until no roller marks are visible.
 - 3. Finish paving smoothness tolerance:
 - a. Free from birdbath.
- F. General Procedures:
 - 1. Install in full conformance with Part 400 of the RIDOT Standard Specification. Alter tolerances to these specifications as follows:
 - 2. Surface tolerance shall be 1/4" in twelve feet.
 - 3. Thickness tolerance shall be minus 1/4" to plus 1/4".
 - 4. Note material changes to proposed pavement design mix herein noted, for approval.
- G. Pavement Thickness:
 - 1. Install all pavements in accordance with the plans at areas and courses as indicated. All pavement thicknesses are to be finished in place full layers. Base Course shall be placed to finish at a thickness of 2" (two inches), and the Ramp Friction Course will be placed to finish at a thickness of 2" (two inches) unless otherwise noted on the plans.
- H. Payment for all pavement shall be on a tonnage basis in place to the proper design mix and associated yield.

3.7 PROTECTION:

- A. Protect the Bituminous concrete paved areas from traffic until the pavement layers are fully cured, and does not pick up under foot or wheeled traffic. Provide necessary sealers or surface materials to accelerate to curing process, as approved by the Architect/Engineer. Payment included in the pavement item being applied.

*******END OF SECTION*******

**SECTION 03300 CAST-IN-
PLACE CONCRETE**

PART 1 - GENERAL:

1.1 DESCRIPTION:

- A. Work included:
 - 1. Provide cast-in-place concrete, including formwork and reinforcement, where shown on the Drawings, as specified herein and as needed for a complete and proper installation.

- B. Related Work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, Bid Documents along with Contents A through I and attachments 1 through 10.
 - 2. All subsequent addendums.
 - 3. Other requirements affecting Project Record Documents may appear in pertinent other Sections of these Specifications.

1.2 QUALITY ASSURANCE:

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

- B. Comply with the latest recommendations of the following standards:
 - 1. ACI #301 - Structural Concrete for buildings
 - 2. ACI #315 - Detailing Reinforcing Steel
 - 3. ACI #347 - Formwork
 - 4. ACI #318 - Building Code Requirements for Reinforced Concrete

- C. Provide access for and cooperation with the inspection of all aspects of this section.

- D. Do not commence placement of concrete until mix designs have been reviewed and approved by the Architect/Engineer and all governmental agencies having jurisdiction, and until copies of the approved mix designs are at the job site and the batch plant.

- E. Concrete Testing
 - 1. Employ testing laboratory acceptable by the Architect/Engineer, to perform materials evaluation, testing, and design of concrete mixes.
 - 2. Perform sampling and testing during the concrete placement, which may include the following, as directed by the Architect/Engineer. *This testing does not relieve the Contractor of the responsibility of providing concrete in compliance with these Specifications.* Contractor may provide additional testing as necessary to ensure the quality of concrete.
 - a. Sampling: ASTM C172
 - b. Slump: ASTM C143, one test for each load at point of discharge.
 - c. Air Content: ASTM C173, one for each set of compressive strength specimens.
 - d. Compressive Strength: ASTM C39, one set for each truckload or each fraction thereof of each class of concrete; one specimen tested at 7 days, one specimen tested at 28 days, one

specimen retained for later testing if required, and one specimen retained at the job site. All specimens must be clearly labeled with permanent markings.

- e. When the total quantity of concrete is less than one truckload, the Architect/Engineer may waive testing requirements at his discretion.
- f. Test results will be reported to the Architect/Engineer and concrete producer, in writing no greater than 24 hours after the tests have been made.

1.3 SUBMITTALS:

- A. Secure approved concrete mix designs from the testing laboratory in accordance with provisions of the Bid Documents, and submit to the Architect/Engineer for review and approval.
- B. Distribute approved mix designs to testing laboratory, batch plant, and job site.
- C. Concrete Testing:
 1. Submit manufacturer's data with installation instructions for proprietary materials including reinforcement and forming accessories, admixtures, joint materials, hardeners, curing materials and others as requested by the Architect/Engineer.
 2. Laboratory test or evaluation reports for concrete materials and mix designs.

PART 2 - PRODUCTS:

2.1 FORMS

- A. Design, erect, support, brace, and maintain formwork so it will safely support vertical and lateral loads which may be applied until such loads can be supported safely by the concrete structure.
- B. Construct forms to the exact sizes, shapes, lines and dimensions shown, and as required to obtain accurate alignment, location, grades, and level and plumb work in the finished structure.
- C. Smooth plywood forms for exterior vertical surfaces. Earth forms permitted only when approved by the Architect/Engineer.

2.2 REINFORCEMENT

- A. Fabricate reinforcement to the required shapes and dimensions, within fabrication tolerances stated in the CRSI "Manual of Standard Practices."
- B. Do not use reinforcement having any of the following defects:
 1. Bar lengths, depths of bends exceeding the specified fabricating tolerances;
 2. Bends or kinks not indicated on the Drawings or required for this Work;
 3. Bars with cross section reduced due to excessive rust or other causes.
- C. All steel reinforcement shall be epoxy coated. Fabrication and handling shall conform to ASTM D3963. All damage to the epoxy coating shall be patched in the field using a two-part epoxy repair material, approved by the coating manufacturer.

2.3 CONCRETE

- A. Comply with pertinent provisions of ACI 301-72, except as may be modified by supplemental requirements stated in Part 3 of this Section.
- B. All concrete shall be 3" slump 4000 psi mix as specified below.
- C. The concrete mix design shall include the addition of Darex Corrosion Inhibitor as manufactured by W. R. Grace, Inc. or approved equal. Addition quantity shall be as specified for the manufacturer.

2.4 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until all unsatisfactory conditions are corrected.

3.2 REINFORCING

- A. Comply with the following, as well as the specified standards, for details and methods of reinforcing placement and supports.
 - 1. Clean reinforcement and remove loose dust and mil scale, earth and other materials which reduce bond or destroy bond with concrete.
 - 2. Position, support, and secure reinforcement against displacement by forms, construction, and the concrete placement operations.
 - 3. Place reinforcement to obtain the required coverages for concrete protection.
 - 4. Unless otherwise shown on the Drawings, or required by governmental agencies having jurisdiction, lap bars 48 diameters minimum.

3.3 EMBEDDED ITEMS

- A. Set bolts, inserts, and other required items in the concrete, accurately secured so they will not be displaced, and in the precise locations needed. Anchor bolts for float attachment shall be set before concrete is placed. Chemical anchors will not be allowed.

3.4 MIXING CONCRETE

- A. Transit mix the concrete in accordance with provisions of ASTM C94.
- B. Mixing Water:
 - 1. At the batch plant, withhold 2.5 gallons of water per cubic yard of concrete.
 - 2. Upon arrival at the job site, add all or part of the withheld water (as required for proper slump) before the concrete is discharged from the mixer.

3. Mix not less than five minutes after the withheld water has been added, and not less than one minute of that time immediately prior to discharge of the batch.
 4. Unless otherwise directed, provide 15 minutes total mixing time per batch after first addition of water.
- C. Do not use concrete that has stood for over 30 minutes after leaving the mixer, or concrete that is not placed within 90 minutes after water is first introduced.

3.5 PLACING CONCRETE

A. Preparation:

1. Remove foreign matter accumulated in the forms.
2. Rigidly close openings left in the formwork.
3. Wet wood forms sufficiently to tighten up cracks. Wet other material sufficiently to maintain workability of the concrete.
4. Use only clean tools.
5. Do not use petroleum based products to lubricate forms.

B. Conveying:

1. Perform concrete placing at such a rate that concrete which is being integrated with fresh concrete is still plastic.
2. Deposit concrete as nearly as practicable in its final location so as to avoid separation due to rehandling and flowing.
3. Do not use concrete which becomes non-plastic and unworkable, or does not meet required quality control limits, or has been contaminated by foreign materials.
4. Remove rejected concrete from the job site.

C. Placing concrete in forms:

1. Deposit concrete in horizontal layers not deeper than 24 inches.
2. Remove temporary spreaders in forms when concrete has reached the elevation of the spreaders.

D. Placing concrete slabs:

1. Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed. Vibrate all slab concrete.
2. Bring slab surfaces to the correct level with a straight edge, then strike off.
3. Use bullfloats or darbies to smooth the surface, leaving the surface free from bumps and hollows.
4. Do not sprinkle water on the plastic surface. Do not disturb the slab surface prior to start of finishing operations.
5. Do not pour concrete on frozen or wet ground, pour on prepared surface only.

3.6 CONSOLIDATION

A. General:

1. Consolidate each layer of concrete immediately after placing, by use of internal concrete vibrators supplemented by hand spading, rodding, or tamping.
2. Do not vibrate forms or reinforcement.
3. Do not use vibrators to transport concrete inside the forms.

3.7 JOINTS

- A. Construction joints:
1. Apply construction joints only where specified in the drawings.

3.8 REMEDIAL WORK

- A. Repair or replace deficient work as directed by the Architect/Engineer and at no additional cost to the Owner.

3.9 SUPPLEMENTAL REQUIREMENTS:

- A. Where consistent with the design shown on the Drawings and in these Specifications, provide the products and activities described in ACI 301-72 except as modified below. Item numbers cited below are item numbers contained in ACI 301.
1. 1.1.3: Definitions:
 - a. Delete the definition of "Contract Documents" and refer to the definition given in the General Conditions of the Contract.
 2. 3.2: Strength of concrete:
 - a. For boat ramp surface:
5000 psi - 3" slump
 3. 3.8: Method of proportioning concrete:
 - a. Secure and submit proposed design mixes prepared by the selected testing agency described in Part 1.2(F) of Section 03300 of these Specifications.
 - b. Note that under item 12.1 below, admixtures will not be permitted in certain concrete.
 6. 4.1.4: Shop Drawings for formwork:
 - a. Design of formwork is the responsibility of the Contractor.
 - b. Shop Drawings for formwork may be required on the job site for coordination of the work of various subcontractors, but will not be reviewed by the Architect/Engineer.
 7. 4.5.5: Minimum strengths of concrete to be reached before weight-supporting formwork and shoring may be removed:
 - a. Formwork not supporting concrete (such as sides of beams, walls, columns, or similar parts of the Work) may be removed after cumulatively curing at not less than 50 degrees F for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operations, and provided that curing and protection operations are maintained.
 - b. Formwork supporting weight of concrete (such as beam soffits, joists, slabs, and other structural elements) may not be removed in less than fourteen (14) days after placing of concrete and not until concrete has attained design minimum 28-day compressive strength. Determine potential compressive strength of in-place concrete by testing field-cured specimens representative of the concrete location or members.
 - c. Form facing materials may be removed four days after placing of concrete, only if shores and other vertical supports have been arranged to permit removal of form facing material without loosening or disturbing shores and supports.
 8. 5.1.1: Shop Drawings for reinforcing steel and accessories:
 - a. Submit in accordance with bid documents.
 9. 5.2: Types and grades of reinforcing steel:
 - a. Comply with ASTM A165:

SECTION 03400
PRECAST BOAT RAMP SLABS

PART 1 - GENERAL:

1.1 DESCRIPTION:

- A. Work included: Provide precast concrete boat ramp slabs where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, Bid Documents along with Contents A through I and attachments 1 through 10.
 - 2. All subsequent addendums.

1.2 QUALITY ASSURANCE:

- A. Use adequate numbers of workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Qualifications of manufacturer: Demonstrate capability to make and provide the specified quality products by attestation of the Prestressed Concrete Institute under the Plant Certification Program.

1.3 SUBMITTALS:

- A. Comply with pertinent provisions of Section 01340.
- B. Product data: Within 5 days after the Contractor has the Owner' Notice to Proceed, submit:
 - 1. Materials list of items proposed to be provided under this Section;
 - 2. Manufacturers' specifications and other data needed to prove compliance with the specified requirements;
 - 3. Manufacturers' certifications and laboratory tests reports as required;
 - 4. Shop Drawings, prepared in accordance with pertinent provisions of Section 01500 of these Specifications and showing complete information for fabrication and erection of the work of this Section including, but not necessarily limited to:
 - a. Member dimensions and cross sections; locations, size, and type of reinforcement, including special reinforcement and lifting devices necessary for handling and erection;
 - b. Erection procedures, sequence of erection, and required handling equipment;
 - c. Layout, dimensions, and identification of each precast unit corresponding to the sequence and procedure of installation;
 - d. Details of inserts, connections, and joints, including accessories and construction at openings in the precast units;
 - e. Location and details of anchorage devices that are to be embedded in other construction.

1.4 PRODUCT HANDLING:

- A. Comply with pertinent provisions of the bid documents.
- B. Delivery, storage, and handling:
 - 1. Deliver the work of this Section to the job site in such quantities and at such times as to assure the continuity of construction.
 - 2. Store units at the job site in a manner to prevent cracking, distortion, warping, staining, and other physical damage, and in a manner to keep markings visible.
 - 3. Lift and support the units only at designated lifting points or supporting points as shown on the approved Shop Drawings.

PART 2 - PRODUCTS:

2.1 FORMWORK:

- A. The Owner will provide the contractor with two sets of forms for the precast slabs. All surfaces of forms and embedded items shall be thoroughly cleaned of all accumulated mortar or grout from previous concreting and of all other material before concrete is placed.
- E. Form Removal
 - 1. Forms shall be stripped when the concrete strength attains a minimum compressive strength of 2500 psi.
 - 2. Stripping time shall be established during the test placement when test cylinders, field curing along with the concrete they represent have reached the minimum strength specified, 2500 psi.
 - 3. Care must be exercised at all times during removal of forms to prevent chipping of the corners and damage to the smooth finish of the slabs. Do not wedge pry bars and/or other stripping tools against the concrete. Damage caused by improper form removal shall result in the slabs being rejected.
 - 4. Store removed forms in a manner that surfaces to be in contact with fresh concrete will not be damaged.
- F. References - ACI 347 Guide to Formwork for Concrete.

2.2 REINFORCEMENT AND CONNECTION MATERIALS:

- A. Provide reinforcement, accessories, and connection materials required in accordance with the final design as approved by the Architect/Engineer.
- B. Standards:
 - 1. Meet or exceed the quality specified for similar materials under other Sections of these Specifications.
 - 2. For materials not specified under other Sections of these Specifications, but required for a complete and proper installation, provide new materials, first quality of their respective kinds, as selected by the Contractor subject to the approval of the Architect/Engineer.
- C. Materials:

1. Reinforcing steel shall be grade 60, deformed billet-steel bars. All reinforcing shall be furnished in the full lengths indicated on the drawings. No welding or splicing will be allowed. All steel reinforcement shall be epoxy coated. Fabrication and handling shall conform to ASTM D3963. All damage to the epoxy coating shall be patched using a two-part epoxy repair material, approved by the coating manufacturer.
 - a. Use coated tie wires.
 - b. Bar supports, spacers, etc shall be submitted for approval to the Architect/Engineer prior to use.
2. Lifting inserts shall be Richmond (LP-4) stainless steel coil lifting inserts. Minimum insert height shall be 5½ inches with a minimum base width of 7½ inches. The lifting insert must accept a 3/4 inch diameter x 5½ inch long lift lag and be compatible with Richmond Duo Swivel Lifting Plates (LDLP).

2.3 CONCRETE

A. Design mix:

1. The contractor shall submit for approval a design mix that conforms to the following:

| | |
|-----------------------|----------|
| Cement | 705 lbs |
| 3/8" Coarse Aggregate | 1850 lbs |
| Fine Aggregate | 1300 lbs |
| Design Water | 33 gal |
| Slump | 3" - 6" |
| Air Content | 6% ± 1% |
| Air Admixture MBVR | 7 oz/cy |
| Glemium 3000 | 46 oz/cy |
| Rheocrete C.N.I. | 4 gal/cy |

B. Design strength:

1. Design of concrete shall be based on concrete placed in severe exposure conditions including resistance to freeze-thaw, abrasion, chloride resistance and durability. Concrete shall meet or exceed a compressive strength of 5,000 psi at 28 days.

2.4 CONCRETE TESTING

- A. Procedures for obtaining representative samples of fresh concrete as delivered to the forms on which tests are to be performed to determine compliance with quality requirements of the specifications shall be in accordance with ASTM C172.
- B. In accordance with ASTM standards, the following tests shall be performed on each batch produced:
 1. ASTM C138 Unit Weight/Yield
 2. ASTM C143 Slump
 3. ASTM C231 Air Content of Freshly Mixed Concrete by the Pressure Method
 4. ASTM C1064 Temperature of Freshly Mixed Portland Cement Concrete

5. Ambient air temperature shall be recorded at the time of each placement.
- C. A total of fourteen (14) test cylinders shall be molded and cured throughout the project as follows in conformance with ASTM C31 and shall be tested by a certified independent laboratory.
- D. During the test placement, six (6) cylinders shall be molded, cured, and tested as follows.
 1. Two (2) cylinders shall be field cured along with the concrete they represent and tested to establish a time for stripping the forms.
 2. Four (4) cylinders shall be cured under normal conditions, two (2) tested at 7 days and two (2) tested at 28 days.
- E. The remaining eight (8) cylinders shall be molded and tested at a time and frequency determined by the Architect/Engineer. Four (4) cylinders shall be made at each test, one (1) tested at 7 days, two (2) tested at 28 days, and one retained for later testing at 56 days if both 28 day breaks do not conform the specified 28 day strength. If the 56 day test yields a compressive strength less than 4,500 psi, the slab(s) which the defective concrete was placed shall be rejected and recast.
- F. Field storage of cylinders before delivery, and the methods of delivery to the testing laboratory shall be in accordance with the laboratory's recommendations.
- G. Test cylinders shall have identification tags with the following information recorded:
 1. Date cast;
 2. Concrete batch number;
 3. Slab numbers which the cylinders represent;
 4. Results of the field tests;

2.5 TEST PLACEMENT

- A. Prior to beginning scheduled concrete placement and after approval of the proposed mix proportions, the Contractor shall conduct a test placement of two (2) units.
- B. The Contractor shall use the test placements for the following:
 1. Demonstrating the placing, consolidating, finishing, evaporation protection, curing, and form stripping techniques proposed for use on the project.
 2. Establishing a time for stripping forms as specified herein.
 3. Providing an objective on-site standard for judging the acceptability of the finished slabs when observed by the Architect/Engineer.
- C. These techniques and the final finishing appearance of the slabs shall be reviewed by the Architect/Engineer. If approved, the Contractor may use these two units in the final construction of the boat ramp.
- D. Subsequent placements shall not begin until the test placements have been approved by the Architect/Engineer.

PART 3 - EXECUTION:

3.1 SURFACE CONDITIONS:

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 FABRICATION:

- A. General:
 - 1. Fabricate the work of this Section to the sizes and shapes indicated, and of texture matching the approved Samples.
 - 2. Provide finished units which are straight, true to size and shape, and within the specified casting tolerances.
 - 3. Make exposed edges sharp, straight, and square. Make flat surfaces in a true plane except where rounded edges are called for on the Drawings.
 - 4. Warped, cracked, broken, spalled, stained, and otherwise defective units will not be acceptable.
 - 5. Place and secure in the forms all anchors, clips, stud bolts, inserts, lifting devices, shear ties, and other devices required for handling and installing the slabs and for attachment of subsequent items as indicated or specified.

- B. Casting tolerances: Maintain casting, bowing, warping, and dimension tolerance within the following maximums:
 - 1. Overall dimensions for height and width of units:
 - a. Plus zero of unit dimension to minus 3/32".
 - 2. Make thickness of units plus or minus 1/8" maximum.
 - 3. Bowing or warping:
 - a. Do not exceed 1/360 of the span.
 - 4. Insert locations:
 - a. Place within plus or minus 1/4" in each direction.
 - 5. Opening dimensions to figured dimensions:
 - a. Accurate within a tolerance of plus 1/8" to minus zero.

3.3 CONCRETE PLACEMENT

- A. Notify the Architect/Engineer a minimum of 24 hours in advance of the test placement and the initial scheduled placements.

- B. Place concrete in accordance with ACI 304, ACI 305R, and ACI 306R.

- C. Deposit and consolidate concrete in a continuous operation until the placing of a unit is completed.

- D. Deposit concrete continuously or in layers of such thickness that no concrete shall be placed on concrete which has hardened sufficiently to cause the formation of cold joints, seams or planes of weakness.

- E. Deposit concrete, as nearly as possible, to its final location to avoid segregation.
- F. Do not interrupt successive placements.
- G. Do not permit cold joints to occur.

3.4 CONSOLIDATION

- A. Consolidate concrete in accordance with ACI 309.
- B. Concrete shall be vibrated either externally or internally to achieve maximum density concrete.

3.5 FINISH

- A. Surface finish of slabs shall conform to the dimensions detailed on the Drawings.
- B. Immediately after form removal, concrete shall be repaired and cleaned as follows:
 - 1. All concrete surfaces shall have bugholes greater than 1/8" in diameter and honeycomb areas patched;
 - 2. Any bulges or offsets which shall interfere with the proper setting of the slabs shall be leveled to the correct dimension.
 - 3. All exposed edges shall have fins carefully removed and all rough spots, mortar, grout, or other projections rubbed with Carborundum or abrasive stone to provide a smooth even finish.
 - 4. All stains shall be removed.
- C. The date cast (mm/dd/yy) shall be stenciled on at least one end of each slab.

3.6 PATCHING AND/OR REPAIRING CONCRETE

- A. No patching or pointing of concrete work shall be done until the work has been examined by the Architect/Engineer.
- B. Patching material shall be a proprietary cementitious non-shrink grout of similar color as approved by the Architect/Engineer.
- C. A sample patch of grout shall be required to insure blending with adjacent concrete.

3.7 CURING AND PROTECTION

- A. Curing of concrete shall be in conformance with ACI 308.
- B. Immediately after placement, protect concrete from premature drying, excessive hot or cold temperatures, and from mechanical injury.
- C. Slabs shall be cured with the approved curing method for a minimum of seven (7) days.

- D. Maintain concrete with minimal moisture loss at relatively constant temperature for designated curing period.
- E. Approved liquid curing and evaporative agents shall be compatible with the agents and shall be applied in conformance with the manufacturer's recommendations.

3.8 HANDLING, STORAGE, AND TRANSPORTATION

- A. The Owner will supply the contractor with four lift lags and four double swivel lifting hooks for use during casting and installation. All lifting accessories shall be returned to the Owner along with the forms at the completion of the project.
- B. Slabs shall be handled only by means of approved devices at designated locations.
- C. Storage areas for precast slabs shall be stabilized, and a suitable foundation provided, so the differential settlement or twisting of slabs will not occur.
- D. Stacked members shall be separated and supported by battens placed across the full width of each bearing point.
 - 1. Battens shall be arranged in vertical planes at a distance not greater than the depth of the member from designated pickup point (or directly over lifting insert locations).
 - 2. Batten material shall be carefully selected to avoid staining.
 - 3. When stacking slabs, battens shall not be continuous over more than one stack of precast units.
- E. When transporting slabs, provision shall be made for supporting the slabs as described above.
 - 1. Stacks shall be braced to ensure they remain vertical and to dampen dangerous vibrations.
 - 2. Adequate padding material shall be provided between the concrete slabs and tie chains, cables or straps to prevent abrading or shipping of concrete.
- F. Notify the Architect/Engineer 24 hours prior to delivering any slabs to the project area.

3.9 INSTALLATION

- A. Install slabs in the direction and location shown on the Drawings.
- B. Excavate to grades as shown on the Drawings. Stretch filter fabric and install on newly excavated ground.
- C. Install 2" traprock on top of filter fabric. Smooth traprock as required for grading by pulling an I-beam or similar device from a bull dozer across the stone. Set traprock to exact grades as much as possible.
- D. Install railroad rails on traprock. A used railroad rail may be used subject to the approval of the Architect/Engineer. The rails shall be set to exact grades and slope. Adjust the stone as required to set the rails to grade.
- E. After the rails are set to grade and slope, install 1/2" crushed stone on top of the traprock. Drag the I-

beam across the stone to level using the top of the rails as the guide. Drag the I-beam as many times as required to level the stone.

- F. Lift the precast slabs into place using all the lifting inserts and drop in place as near to its final location as possible. Orient slabs as shown on the Drawings. Push slabs into final location with the blade of a bull dozer. Protect the slabs from direct contact with the blade of the bull dozer by placing a rubber protection device at the bottom of the blade. Any damage or chipping of the slabs during the installation will cause the slabs to be rejected.

*******END OF SECTION*******

SECTION 06010
HEAVY TIMBER CONSTRUCTION
AND WOOD PILES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included: Install pilings, wood framing, bracing and other members as indicated on the Drawings, as specified herein and as needed for complete and proper installation.

B. Related sections:

1. Documents affecting work of this Section include, but are not necessarily limited to, Bid Documents along with Contents A through I and attachments 1 through 10.
2. All subsequent addendums.
3. Section 02010 Subsurface Investigation

1.2 QUALITY ASSURANCE

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

B. The Owner, through the Architect/Engineer, reserves the right of approval of the subcontractor selected for this portion of the Work. Approval will be based, in part, on:

1. Demonstrated successful experience in performing work of similar nature;
2. Acceptable schedule of unit prices for measurement and payment in event of changes in the work of this Section.

C. Installation of all work shall be of the best quality throughout. All work shall be constructed straight and true with alignment to existing and new members taken into consideration. All fasteners shall be drawn up securely.

1.3 SUBMITTALS:

- A. Within ten (10) calendar days after the Contractor has received the Owner's Notice to Proceed, submit the proposed subcontractor's qualifications to the Architect/Engineer for review.
- B. Upon receipt of the Architect/Engineer's approval of the proposed subcontractor, promptly submit sufficient technical data to demonstrate compliance with the specified requirements for materials.

PART 2 - PILINGS

2.1 MATERIAL - PRESSURE TREATED PILINGS

A. All material shall be new. Bearing piles, batter piles and dolphin piles shall be pressure treated Southern Yellow Pine (SYP). Materials shall comply with the latest version of the following for Southern Yellow Pine pressure treated wooden pilings:

1. American Society for Testing Materials (ASTM) D-25, Standard specification for round timber piles;
2. ASTM D-2899, Standard method for establishing design stresses for round timber piles;
3. American Wood Preservers Association (AWPA) C-1, All timber products;
4. AWPA C-3, Piles pressure treatment;
5. AWPA P-5, Standard for water borne preservatives.

B. Treated SYP piles for the floating docks shall have a minimum butt diameter of twelve inches (12") when measured three feet from the end and a minimum tip diameter of seven inches (7"). All piles shall show a substantially uniform taper from tip to butt. Pile lengths shall be as shown on the drawings. Splicing of piles shall not be accepted.

C. Unit stresses for southern pine piles shall be as follows:

- | | |
|----------------------------------|------------------|
| 1. Bending | 2,400 p.s.i. |
| 2. Compression parallel to grain | 1,200 p.s.i. |
| 3. Modulus of Elasticity | 1,500,000 p.s.i. |

D. Pressure Treatment: All SYP piles shall be treated with CCA solution to a minimum net retention of 2.5 pounds per cubic foot. Provide a Certificate of Compliance showing conformance with AWPA C-3 prior to the delivery of material to the site.

E. Treated wood products shall not be dragged along the ground or handled using sharp, pointed tools. They shall be handled with slings, taking care to avoid bruising or breaking of outer fibers.

F. When it is necessary to hold treated wood products in storage, the material shall be stacked on treated or nondecaying skids of such dimensions and so arranged so as to support the material without producing noticeable distortion. All treated material shall be stockpiled in such a manner so as to ensure an air space beneath the material. Storage areas are to be kept free of debris, decayed wood and dry vegetation so as to prevent fire hazard and shall have sufficient drainage to prevent stored wood products being subjected to standing in water.

G. Fabrication of pilings, such as adzing, boring, chamfering, gaining, incising, surfacing or trimming shall be done prior to treatment insofar as is practical. When field fabrication is necessary, the wood shall be treated with a preservative as specified.

2.2 SURFACE CONDITIONS:

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

2.3 EQUIPMENT:

- A. Driving pilings: Pilings shall be driven with an approved drop, steam or vibratory hammer maintained in good condition to assure that full driving energy is delivered to the pile. The driving energy shall be as approved by the Engineer.
- B. Rig the pile driver with fixed leads to guide the hammer from the highest to lowest points of travel in a manner permitting free vertical movement of the hammer, and with leads laterally braced to assure firm support of the pile during driving. The use of followers shall not be permitted.
- C. Pre-drill as required, using equipment and casings as needed for the conditions of the work.

2.4 PILE DRIVING:

- A. Drive the piles straight and true at indicated locations, with deviation from the longitudinal axis of not more than ¼" per ft.
- F. Locate the piles within 3" of the positions indicated on the Drawings. It is the responsibility of the Contractor to adjust pile hoops on the floats to match the pile locations at no additional cost to the Owner.
- C. Continuously drive each pile to reach the full embedded length called for on the Drawings.
 - 1. Lengths shown on the Drawings are considered average values, and the actual lengths may vary when so approved by the Architect/Engineer.
 - 2. Provide driving resistance penetration and refusal values as approved by the Architect/Engineer.
- E. Use suitable cushions or driving heads to avoid damage to the piles, developing proper total driving energy, and directing the energy along the longitudinal center of gravity of the pile.
 - 1. Drive the piles to their full penetration without bending, rupturing, or severely damaging the piles.
 - 2. If failure in any of the above respects is encountered, pull the pile and drive a new pile at no additional cost to the Owner.
- F. Pre-drilling:
 - 1. Jetting to assist penetration will not be accepted.
 - 2. Approved pre-drilling to assist penetration may be used where extreme driving resistance is encountered, or where vibrations from driving may be detrimental to adjacent structures.
 - 3. Make pre-drilling bores 80% of tip diameter and to the depth directed by the soil engineer, reserving the lower phases of penetration solely for driving.
- G. Where piles are pushed up by pressures from driving of adjacent piles, redrive as required and at no additional cost to the Owner.
- H. Except as may be directed otherwise by the Architect/Engineer:
 - 1. Achieve the pile cap top elevations and planned tip elevations shown on the Drawings;
 - 2. Pile shall be driven to the elevation(s) specified on the drawings.

PART 3 - TIMBER CONSTRUCTION

3.1 MATERIALS

- A. All materials shall conform to the latest version of the following standards:

AWPA C-1 Pressure Treatment - General Requirements

AWPA P-5 CCA Treatment

SPA Stress Grades of Southern Pine

NFPA Design Specifications for Stress Grade Lumber

ASTM A-123 Zinc(Hot Galvanized) Casting On Products Fabricated From Rolled, Pressed
and Forged Steel Shapes, Plates, Bars and Stripes

ASTM A-36 Structural Steel

ASTM A-307 Structural Steel Bolts Used for Timber Construction

- B. All timber and decking shall be Southern Yellow Pine of 1,200 PSI or greater stress grade. Submit Certificate of Compliance prior to delivery to the job site. All timber shall be pressure treated with CCA solution to provide a minimum net retention of 1.0 pounds per cubic foot. Deck planks shall be pressure treated with ACQ solution to provide a minimum net retention of 0.6 pounds per cubic foot. Submit a Certificate of Compliance prior to delivery to the job site. Decking shall be dried after treatment to a moisture content of 19% or less. Deck planks shall be of No. 2 Grade.
- C. Hardware and fasteners shall be hot-dipped galvanized steel. Zinc coating shall be performed in conformance with ASTM A-123 and shall satisfactorily withstand a 4 dip Preece Test.
- D. Stored lumber shall be stacked and supported so as to prevent warp or distortion during storage. Wood material shall be stacked on treated or nondecayable skids and supports. Lumber shall be stored with an air space beneath it. Keep storage areas free of debris, decayed wood and dry vegetation to prevent fire hazard. These areas are to be well drained to prevent the material from being subjected to standing water.

3.2 INSTALLATION

- A. Workmanship shall be of the best quality throughout and competent workmen shall be employed for construction of timber work. All work shall be constructed true and exact. No blocking or shimming will be permitted except as indicated on the drawings.
- B. All fastenings used in connection with timber construction, including bolts, lag bolts, and other fastening hardware, shall be placed as indicated on the drawings and as directed, and shall be drawn up securely. On completion of the work and when directed, fastening devices shall be retightened.
- C. Holes for bolts shall be drilled 1/16 inch larger than the nominal diameter of the bolt used. Holes for lag bolts shall be bored the same size as the diameter of the lag bolt shaft measured

at the base of the thread. Lag bolts may be approved by the Architect/Engineer only where through bolting is impossible.

- D. Carefully select individual pieces so that knots and obvious defects will not interfere with placement of bolts or proper fastening. Cut out and discard defects which render a piece unusable. Members may be rejected by the Engineer or On-site Representative, before or after installation, for excessive warp, twist, bow, crook, wane, mildew, fungus or mold, as well as for improper cutting or fitting.
- E. Dock washers shall be used under all bolt heads and nuts which would otherwise come in contact with the wood.
- F. All cuts, holes and injuries to treated wood shall be field treated. Field treatment shall be provided with similar products as used for pressure treatment and as recommended by the wood treatment provider. All cut, bored or injured areas shall be thoroughly saturated with two (2) coats of preservative.

Special precautions will be taken by the Contractor to prevent spillage or contamination to all areas not to be treated and especially to prevent spillage into the adjacent waterway.

- G. Decking shall be installed with 1/4 inch spaces between the planks and shall be fastened with 2 stainless steel screws at each stringer. Replace all damaged, split or otherwise unsafe decking. All deck planks shall be installed level and flush to 1/8 inch. Decking is to be installed with the crown up. Deck planks shall be attached with 3½ inch long #10 stainless steel screws.
- H. The following general conditions apply to all timber work:
 - 1. Install wood blocking and backing as required.
 - 2. Set horizontal members with crown up.
 - 3. Do no notch, cut or bore members except as shown on the drawings or as approved in advance by the Engineer.
 - 4. Make bearings full unless otherwise indicated.
 - 5. Finish bearing surfaces on which structural members are to rest so as to provide sure and even support.
- I. Spiked grid connectors shall be equal to galvanized TECO single curve spiked grid connectors. Spiked grid timber connectors shall be manufactured according to current A.S.T.M. Standard Specifications A47, Grade 32510, for malleable iron castings. They shall consist of opposing spikes which are held in place by fillets. Fillets shall be increased in depth to allow for curvature. They shall be installed with grid applicator or hydraulically, cannot be installed by tightening standard nut.

***** END OF SECTION *****

SECTION 06500
TIMBER FLOATING DOCK

PART 1 - GENERAL:

1.1 DESCRIPTION:

- A. Work included: Provide a design and construct floating timber docks as shown on the plans.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, Bid Documents along with Contents A through I and attachments 1 through 10.
 - 2. All subsequent addendums.

1.2 QUALITY ASSURANCE:

- A. Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Codes and standards:
 - 1. In addition to complying with pertinent codes and regulations of governmental agencies having jurisdiction, unless otherwise specifically directed or permitted by the Architect/Engineer comply with:
 - a. "Product Use Manual" of the Western Wood products Association for selection and use of products included in that manual;
 - b. American Society of Testing Materials (ASTM)
 - 2. Shop drawings shall be completed and stamped by a Professional Engineer licensed in Rhode Island showing the layout, materials, spacings, sizes, connections, etc. for the floats. Calculations shall also be submitted to the Architect/Engineer

1.3 PRODUCT HANDLING:

- A. Comply with pertinent provisions of Section 01640.
- B. Protection:
 - 1. Deliver the materials to the job site and store, in a safe area, out of the way of traffic, and shored up off the ground surface.
 - 2. Protect metals with adequate waterproof outer wrapping.
 - 3. Use extreme care in off loading of floats to prevent damage, splitting, and breaking of materials.

PART 2 - DESIGN:

2.1 GENERAL:

- A. The floating docks shall be constructed of pressure treated timber and wood polymer decking and shall be buoyant enough to satisfy the loading criteria established on the drawings. Dimensions of the floats

shall be as described on the drawings.

- B. The floatation units shall be constructed of crossed linked rotationally-molded (CL200) high density polyethylene units filled with expanded polystyrene. Freeboard shall be as defined on the drawings.
- C. The structural frame of the floats shall be constructed of #2 Southern Yellow Pine or better and be designed to withstand all loading forces and also be designed with adequate bracing to prevent racking and torsion when impacted by boats using the facility as well as three foot waves. Loading shall be as defined on the drawings.
- D. Mooring connections shall be capable of withstanding a mooring load of at least 2.5 Tons.
- E. Decking shall be CCA-treated southern yellow pine
- F. Except as otherwise noted herein, all fasteners used on the float construction shall be hot dipped galvanized according to the following:
 - 1. Bolts and Nuts - ASTM A-307
 - 2. Lag Screws (used only where approved by the Architect/Engineer) - Federal Specification FF-B-56
 - 3. Nails and spikes - Federal Specification FF-M-101
 - 4. Steel Hardware - ASTM A-123 or ASTM A-153 as required
- G. Stainless steel screws shall be used to secure the polymer decking to the wooden frame. Each hole shall be predrilled and the head of each screw shall be countersunk by drilling a slightly larger diameter hole than the diameter of the screw head into the polymer approximately the thickness of the head of the screw. Screws shall be square drive type 305 stainless steel.
- H. Dock hardware shall be hot dipped galvanized and manufactured in accordance with ASTM A-36. Hardware shall be used to reinforce corners and connections so that the dock withstands the design forces.
- I. Internal pile guides shall be Merco adjustable rollers or approved equals.
- J. Mooring cleats shall be constructed of heavy duty hot dipped galvanized steel.

***** **END OF SECTION** *****

SECTION 10342
MARINE SPECIALTIES

PART 1 - GENERAL:

1.1 DESCRIPTION:

- A. Work included: Provide accessories where indicated on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, Bid Documents along with Contents A through I and attachments 1 through 10.
 - 2. All subsequent addendums.

1.2 QUALITY ASSURANCE:

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

1.3 SUBMITTALS:

- A. Comply with pertinent provisions of the Bid Documents.
- B. Product data: Within thirty-five (35) calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
 - 1. Materials list of items proposed to be provided under this Section;
 - 2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;
 - 3. Manufacturers' data clearly defining the required support and other details of installation to enable proper interface with the work of other trades.
 - 4. Manufacturer's recommended installation procedures which, when approved by the Architect/Engineer, will become the basis for accepting or rejecting actual installation procedures used on the Work.

1.4 PRODUCT HANDLING:

- A. Comply with pertinent provisions of the Bid Documents.

PART 2 - PRODUCTS:

2.1 ADJUSTABLE INTERNAL PILE GUIDES:

- A. Provide adjustable internal pile guides such as that manufactured by Merco Marine, 60 Merco Rd, Wellsburg, WV, 26070, 800-396-3726, Or approved equal, where shown on the drawings and as needed for a complete installation, and having H-RA4 rollers:

2.2 RUBRAIL

- A. Provide 4" extruded P-fender bumper strip material, non-marring gray marine grade vinyl material.

2.3 OTHER MATERIALS:

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect/Engineer.

PART 3 - EXECUTION:

3.1 SURFACE CONDITIONS:

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 INSTALLATION:

- A. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.
- B. Install each item in its proper location, firmly anchored into position, and in accordance with the manufacturer's recommendations.

*******END OF SECTION*******

GENERAL CONDITIONS

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PART I

ARTICLE 1: CONTRACT AND CONTRACT DOCUMENTS

The drawings, specifications, and addenda enumerated in Article 1 of the Special Conditions, the Advertisement for Bids, the Information for Bidders, and the Bid Proposal as accepted by the OWNER, shall be binding upon the parties to this Agreement as if fully set forth therein. Whenever the terms Contract Documents is used, it shall mean and include this Contract, Special Conditions, General Conditions, the Information for Bidders, the Bid Proposal, Addenda, the Technical Specifications and the Drawings. The OWNER shall interpret his own requirements. In case of conflict or inconsistency between the provisions of the signed portions of the Contract Documents and those of the specifications, the provisions of the signed portions shall govern.

ARTICLE 2: DEFINITIONS

The following terms as used in this Contract are defined as follows:

- a. CHANGE ORDER - A written order to the Contractor authorizing an addition, deletion or revision in the work within the general scope of the Contract Documents, or authorizing an adjustment in the Contract Price or Contract Time.
- b. CONTRACT DOCUMENTS - The contract, including Advertisement for Bids, Information for Bidders, Bid, Bid Bond, Agreement, Payment Bond, Performance Bond, General Conditions, Special Conditions, Technical Specifications, Notice of Award, Notice To Proceed, Change Order, Drawings, and Addenda.
- c. CONTRACTOR - A person, firm or corporation with whom the Contract is made by the OWNER.
- d. DRAWINGS - The part of the Contract Documents which show the characteristics and scope of the work to be performed and which have been prepared or approved by the Engineer.
- e. ENGINEER - Shall mean for the purpose of this Contract, the firm of Public Works Director who shall act as the authorized representative of the Owner whenever reference is made for such authorization.
- f. FIELD ORDER - A written order effecting a change in the work not involving an adjustment in the Contract Price or an extension of the Contract Time, issued by the Engineer to the Contractor during construction.
- g. NOTICE OF AWARD - The written notice of the acceptance of the Bid from the Owner to the successful Bidder.
- h. NOTICE TO PROCEED - Written communication issued by the Owner to the Contractor authorizing him to proceed with the work and establishing the date of commencement of the work.
- i. OWNER: - shall mean, for the purpose of this Contract, the party as defined in the Agreement section of the Contract Documents.

j. RESIDENT PROJECT REPRESENTATIVE - The authorized representative of the Owner who is assigned to the Project Site or any part thereof.

k. SHOP DRAWINGS - All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the Contractor, a SubContractor, Manufacturer, Supplier or Distributor, which illustrate how specific portions of the work shall be fabricated or installed.

l. SPECIFICATIONS (TECHNICAL SPECIFICATIONS) - A part of the Contract Documents consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship.

m. SUBCONTRACTOR - A person, firm, or corporation supplying labor and materials, or only labor, for work at the site of the project; for, and under a separate Contract or Agreement with the CONTRACTOR.

n. SUBSTANTIAL COMPLETION - That data as certified by the Engineer when the construction of the Project or the specified part thereof is sufficiently completed, in accordance with the Contract Documents, so that the Project or specified part can be utilized for the purpose for which it is intended.

o. WORK ON THE PROJECT: - Work to be performed at the location of the project, including the transportation of materials and supplies to or from the site by employees of the CONTRACTOR or any SUBCONTRACTOR.

ARTICLE 3: QUANTITIES OF ESTIMATE

Whenever the estimated quantities of work to be done and materials to be furnished under this Contract are shown in any of the documents including the Bid Proposal; they are given for use in comparing bids and the right is especially reserved by the OWNER to increase or diminish them as may be deemed necessary or desirable by the OWNER. Such increases or decreases shall in no way affect this Contract, nor shall any such increases or decreases give cause for claims or liabilities for damages.

ARTICLE 4: CONFLICTING CONDITIONS

Any provisions of these General Conditions which may be in conflict or inconsistent with any of the articles in the Special Conditions shall be void to the extent of such conflict or inconsistency.

ARTICLE 5: PROVISIONS OF LAW DEEMED INSERTED

Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included herein, and if through mistake or otherwise, any such provision is not inserted, or is not correctly inserted, the Contract shall forthwith be physically amended to make such insertion or correction.

ARTICLE 6: NOTICE AND SERVICE THEREOF

The service of any notice, letter, or other communication shall be deemed to have been made by one of the contracting parties on the other party to the Contract when such letter, notice or other communication has been

delivered to the legal office address of the addressee, by a duly authorized representative of the addressor in person, or when such notice, letter, or other communication has been deposited in any regularly maintained mailbox of the United States Post Office, in a properly addressed, postpaid wrapper. The date of such service shall be considered to be the date of such personal delivery or mailing.

The address of the Contractor noted in his bid and/or the address of his field office on or near the site of work shall be considered his legal address for the purposes as set forth above.

ARTICLE 7: GRATUITIES

a. If it is found, after notice and hearing, by the Owner that gratuities (in the form of entertainment, gifts or otherwise) were offered or given by the Contractor, or any agent or representative of the Contractor, to any official, employee or agent of the Owner, or of the State, with a view toward securing a contract or securing favorable treatment with respect to the awarding or amending, or the making of any determinations with respect to the performance of this Contract, the Owner may, by written notice to the Contractor, terminate the right of the Contractor to proceed under this Contract or may pursue each other rights and remedies provided by law or under this Contract: Provided, that the existence of the facts upon which the Owner makes such findings shall be in issue any may be reviewed in proceedings pursuant to the "Remedies" clause of this Contract.

b. In the event this Contract is terminated as provided in Paragraph (a) hereof, the Owner shall be entitled (1) to pursue the same remedies against the Contractor as it could pursue in the event of a breach of the Contract by the Contractor, and (a) as a penalty in addition to any other damages to which it may be entitled by law, to exemplary damages in an amount (as determined by the Owner) which shall be not less than three nor more than ten times the cost incurred by the Contractor in providing any such gratuities to any such officer or employee.

ARTICLE 8: COVENANT AGAINST CONTINGENT FEES

The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure this Contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty, the Owner shall have the right to annul this Contract without liability or in its discretion to deduct from the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

ARTICLE 9: REMEDIES

Except as may be otherwise provided in this contract, all claims, counterclaims, disputes and other matters in question between the Owner and the Contractor arising out of or relating to this agreement or the breach thereof will be decided by arbitration if the parties hereto mutually agree, or in a court of competent jurisdiction within the State in which the Owner is located.

PART II

The rights and obligations of the CONTRACTOR under this Contract shall include, but not be limited to the following:

ARTICLE 10: REPRESENTATIONS OF THE CONTRACTOR

The Contractor represents and warrants:

- a. That he is financially solvent and that he is experienced and competent to perform the type of work required under this Contract and that he is able to furnish the plant materials, supplies, or equipment that may be necessary to perform the work as specified.
- b. That he is familiar with all Federal, State and municipal laws, ordinances, orders, and regulations which may in any way affect the project work, or the employment of persons thereon, including but not limited to any special acts relating to the work or to the project of which is a part.
- c. That such temporary and permanent work required by the Contract Documents to be done by him will be satisfactorily constructed and can be used for the purpose for which it was intended and that such construction will not injure any person or damage property.
- d. That he has carefully examined the drawings, specifications, and addenda, if any, and the site of the work and that from his own investigations, he has satisfied himself as to the nature and location of the work, the character of equipment and other facilities needed for the performance of the work, the general and local conditions, and all other items that may effect the work.
- e. That he is aware of the hazards involved in the work and the danger to life and property both evident and inherent and that he will conduct the work in a careful and safe manner without injury to persons or property.

ARTICLE 11: CONTRACTOR'S OBLIGATIONS

The Contractor shall perform all work in a good Workmanlike manner, and in accordance with the plans and specifications and any supplements thereto, and according to any directions or orders given by the Owner. He shall furnish all supplies, materials, facilities, equipment, and means necessary or proper to perform and complete the work required by this Contract. He shall furnish, erect, maintain, and remove any construction plant or temporary work as may be required. He alone shall be responsible for the safety, efficiency, and adequacy of his plant, appliances, and methods, and for any damage which may result from their failure or their improper construction, maintenance, or operation.

The Contractor shall observe, comply with, and be subject to all terms, conditions, requirements, and limitations of the Contract and specifications and shall do, carry on, and complete the entire work to the satisfaction of the Owner.

The Contractor shall be solely responsible for all the work and shall provide all precautionary measures necessary for preventing injury to persons or damage to property. All injury or damage of whatever nature resulting from the work or resulting to persons, property, or the work during its progress,

from whatever cause, shall be the responsibility of the Contractor.

The Contractor shall hold the Owner and Engineer, or their duly authorized agents, harmless and defend and indemnify them against damages or claims for damages due to injuries to persons or property arising out of the execution of the project work, and for damages to materials furnished for the work, for infringement of inventions, patents, and patent rights used in doing the work, and for any act, omission, or instance of neglect by the Contractor, his agents, employees, or subContractors.

The Contractor shall bear all losses resulting to him, including but not limited to losses sustained on account of the character, quality, or quantity of any part of the work, or all parts of the work, or because the nature of the conditions in or on the project site are different from what was estimated or indicated, or on account of the weather, elements, or other causes.

ARTICLE 12: TIME FOR COMPLETION AND LIQUIDATED DAMAGES

a. It is hereby understood and mutually agreed by and between the Contractor and the Owner that the date of beginning and the time of completion of the work as specified in this Contract are ESSENTIAL CONDITIONS of this Contract, and it is further mutually understood and agreed that the work embraced in this Contract shall be Commenced on a date to be specified in the Notice to Proceed.

b. The Contractor agrees that said work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will insure full completion thereof within the time specified, and further that time of completion as agreed upon is reasonable, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.

c. If the said Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a partial consideration for the awarding of this Contract, to pay to the Owner the amount specified in the Contract, not as a penalty, but as liquidated damages for such breach of Contract as hereinafter set forth for each and every calendar day that the Contractor shall be in default after the time stipulated in the Contract for completing the work.

d. The said amount is fixed and agreed upon by and between the Owner and the Contractor, and said amount is agreed to be the amount of damages the Owner would sustain in such an event as the above-mentioned, and said amount shall be retained from time to time by the Owner from current periodical payments.

e. It is further agreed that time is of the essence in each and every portion of the Contract and specifications; where in a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the Contract an additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be of the Contractor shall not be charged when the delay in completion of the work is due to:

1. Any preference, priority, or allocation order duly issued by the government, subsequent to the date of the Contract.

2. Unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including, but not restricted to acts of God, or of the public enemy, act of the Owner, acts of another contractor, floods, epidemics, strikes, and unusually severe weather.

3. Any delays of subContractors or suppliers approved by the Owner. Provided further that the Contractor shall within ten days (10) from the beginning of the delay, unless the Owner shall grant a further period of time prior to the date of final settlement of the Contract, notify the Owner in writing of the causes of the delay. The Owner shall ascertain the facts and extent of the delay and notify the Contractor within a reasonable time of its decision in the matter.

ARTICLE 13: TERMINATION FOR DEFAULT; DAMAGES FOR DELAY; TIME EXTENSIONS

a. If the Contractor refuses or fails to prosecute the work, or any separable part thereof, with such diligence as will insure its completion within the time specified in this Contract, or any extension thereof, or fails to complete said work within such time, the Owner may, by written notice to the Contractor, terminate his right to proceed with the work or such part of the work as to which there has been a delay. In such event, the Owner may take over the work and prosecute the same to completion, by Contract or otherwise, and may take possession of and utilize in completing the work such materials, appliances, and plant as may be on the site of the work and necessary therefore. Whether or not the Contractor's right to proceed with the work is terminated, he and his sureties shall be liable for any damage to the Owner resulting from his refusal or failure to complete the work within the specified time.

b. If fixed and agreed liquidated damages are provided in the Contract and if the Owner so terminates the Contractor's right to proceed, the resulting damage will consist of such liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned the Owner in completing the work.

c. If fixed and agreed liquidated damages are provided in the Contract and if the Owner does not so terminate the Contractor's right to proceed, the resulting damage will consist of such liquidated damages until the work is completed or accepted.

d. The Contractor's right to proceed shall not be so terminated nor the Contractor charged with resulting damage if:

1. The delay in the completion of the work arises from causes other than normal weather beyond the control and without the fault or negligence of the Contractor, including but not restricted to, acts of God, acts of the public enemy, acts of the Owner in either its sovereign or contractual capacity, acts of another Contractor in the performance of a Contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather, or delays of subContractors or suppliers arising from causes other than normal weather beyond the control and without the fault or negligence of both the Contractor and such subContractors or suppliers; and

1. The Contractor, within 10 days from the beginning of any such delay (unless the Owner grants a further period of time before the date of final payment under the Contract), notifies the Owner in writing of the causes of delay.

The Owner shall ascertain the facts and the extent of the delay and extend the time for completing the work when, in his judgment, the findings of fact justify such and extension, and his findings of fact shall be final and conclusive on the parties, subject only to appeal as provided in the Remedies clause of this Contract.

e. If, after notice of termination of the Contractor's right to proceed Under the provisions of this clause, it is determined for any reason that the Contractor was not in default under the provisions of this clause, or that the delay was excusable under the provisions of this clause, the rights and obligations of the parties shall, if the Contract contains a clause providing for termination for convenience of the Owner, be the same as if the notice of termination had been issued pursuant to such clause. If, in the foregoing circumstances, this Contract does not contain a clause providing for termination for convenience of the Owner, the Contract shall be equitably adjusted accordingly; failure to agree to any such adjustment shall be subject to the Remedies clause of this Contract.

f. The rights and remedies of the Owner provided in this clause are in addition to any other rights and remedies provided by law or under this Contract.

g. As used in paragraph (d) (1) of this clause, the term, "SubContractors or suppliers", means Contractors or suppliers at any tier.

ARTICLE 14: CONTRACT SECURITY

The Contractor shall furnish Payment and Performance Bonds in an amount equal to at least one hundred percent (100%) of the Contract price as security for the faithful performance of the Contract, and for the payment of all persons performing labor on the project under this Contract and furnishing materials, equipment and all other incidentals in connection with this Contract. The Surety on such bonds shall be a duly authorized surety company, licensed to do business in the State of Rhode Island and satisfactory to the Owner. The cost of the same shall be paid by the Contractor. Prior to the starting of any work, the bonds must be approved by the Owner.

ARTICLE 15: ADDITIONAL OR SUBSTITUTE BOND

If at any time the Owner, for justifiable cause, shall become dissatisfied with any Surety or Sureties holding payment bonds, the Contractor shall, within five (5) days after notice from the Owner to do so, substitute an acceptable bond or bonds in such form and Signed by such other Surety as may be satisfactory to the Owner. The Premiums of such bonds shall be paid by the Contractor. No further payments will be deemed due, nor will be made until the new Surety or Sureties shall have furnished such an acceptable bond to the Owner.

ARTICLE 16: INDEMNITY

The Contractor shall at all times indemnify and save harmless the Owner and the Engineer, their servants and agents, from any and all claims and from any suits, litigations, damages, losses or the like arising out of injuries sustained or alleged to have been sustained by any persons or property in connection with the contract work, caused in whole or in part by acts or omissions of the Contractor, his subcontractors, materialmen, or anyone directly or indirectly connected with the contract work.

ARTICLE 17: SUPERINTENDENCE BY THE CONTRACTOR

The Contractor shall give the work the constant attention necessary to facilitate the progress thereof and shall cooperate with the Owner in every possible way.

At the site of the work, the Contractor shall, at all times, employ a construction superintendent who shall have full authority to act for the Contractor. It is understood that the employment of such representative shall be acceptable to the Owner and shall be such a person as can be continued in the capacity for the duration of the Contract, unless he ceases to be on the Contractor's payroll.

ARTICLE 18: CONTRACTOR TO LAY OUT HIS OWN WORK

The Owner will establish such general reference points as in his judgment will enable the Contractor to proceed with the work. The Contractor, at his own expense, shall provide all materials and equipment and such qualified helpers as the Owner may require for setting the general reference points and shall protect and preserve all stakes, benches, and other markers used to identify the reference points. The Contractor shall lay out all the Contract work from the above and shall be responsible for the accuracy of all lines, grades and measurements.

ARTICLE 19: COMPETENT HELP TO BE EMPLOYED

The Contractor shall employ experienced foremen, craftsmen and other workmen competent in the work in which they are to be engaged.

ARTICLE 20: PERMITS AND REGULATIONS

The Contractor shall procure all permits, licenses, and approvals necessary for the execution of the Contract work. The Town shall waive all application fees for Town permits. **STATE FEES ARE NOT WAIVED.**

The Contractor shall comply with all laws, regulations, ordinances, orders and rules relating to the performance of the work, the protection of the adjacent property, and the maintenance of passageways, guard fences, and other protective facilities.

ARTICLE 21: CONSTRUCTION SCHEDULE AND PERIODIC ESTIMATES

Within five (5) days after the date of "Notice to Proceed", the Contractor shall deliver to the Owner an estimated construction progress schedule in a form satisfactory to the Owner, showing the proposed dates of commencement and completion of each of the various subdivisions of work required under the contract documents and the anticipated amount of each monthly payment that will become due the Contractor in accordance with the progress schedule. The Contractor shall also furnish on forms to be supplied by the Owner: 1. a detailed estimate, giving a complete breakdown of the contract price; and 2. periodic itemized estimates of the work done for the purpose of making partial payments thereon.

The Contractor shall perform the work of this Contract to conform with the schedule as approved by the Owner, except that the Owner reserves the right to amend and alter the construction schedule at any time, in a manner which is deemed to be in the best interest of the Owner to do so. The Contractor shall arrange his work to conform with this schedule as it may be revised from time to time by the Owner, at no additional expense to the Owner. The Contractor shall notify the Owner immediately of any circumstances which may affect the performance of the work in accordance with current construction schedule.

ARTICLE 22: SEQUENCE OF THE WORK

The Contractor shall be required to prosecute his work in accordance with a schedule prepared by him in advance in accordance with additional requirements specified herein and approved by the Owner. This scheduling shall state the methods and shall forecast the times of doing each portion of the work. Before beginning any portion of the work, the Contractor shall give the Owner advance notice and ample time for making necessary preparations.

ARTICLE 23: AUDIT; ACCESS TO RECORDS

The Contractor shall maintain books, records, documents and other evidence directly pertinent to performance of work under this Contract in accordance with generally accepted accounting principles and practices. The Contractor shall also maintain the financial information and data used by the Contractor in the preparation or support of the cost submission or for any negotiated contract or change order and a copy of the cost summary submitted to the Owner. The Contractor will provide proper facilities for such access and inspection.

Audits conducted pursuant to this Provision shall be in accordance with generally accepted auditing standards and established procedures and guidelines of the reviewing or audit agency(ies).

The Contractor agrees to the disclosure of all information and reports resulting from the access to records pursuant to paragraphs above, to any of the agencies referred to above, provided that the Contractor is afforded the opportunity for an audit exit conference, and an opportunity to comment and submit any supporting documentation on the pertinent portions of the draft audit report that the final audit report will include written comments of reasonable length, if any, of the Contractor.

Records under paragraphs above, shall be maintained and made available during performance on work under this Contract and until three years from the date of final payment for the project. In addition, those records which relate to any "Dispute", appeal agreement, or litigation, or the settlement of claims arising out of such performance, or costs or items to which an audit exception has been taken, shall be maintained and made available until three years after the date of resolution of such appeal, litigation, claim or exception.

ARTICLE 24: REPORTS, RECORDS AND DATA

The Contractor and each of his subcontractors, shall submit to the Owner such schedules of quantities, and costs, progress schedules, pay-

rolls, reports, estimates, records and other data as the Owner may request concerning the work performed or to be performed under this Contract.

ARTICLE 25: DIFFERING SITE CONDITIONS

- a. The Contractor shall promptly and before such conditions are disturbed, notify the Owner in writing of: (1) subsurface or latent physical conditions at the site differing materially from those indicated in this Contract, or (2) unknown physical conditions at the site, of any unusual nature, differing materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in this Contract. The Owner shall promptly investigate the conditions, and if he finds that such conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any of the work under this Contract, whether or not changed as a result of such conditions, an equitable adjustment shall be made and the Contract modified in writing accordingly.
- b. No claim of the Contractor under this clause shall be allowed unless the Contractor has given the notice required in (a) above; provided, however, the time prescribed therefore may be extended by the Owner.
- c. No claim by the Contractor for an equitable adjustment hereunder shall be allowed if asserted after final payment under this Contract.

ARTICLE 26: PAYMENTS BY THE CONTRACTOR

The Contractor shall pay:

- a. for all transportation and utility services not later than the 20th day of each calendar month following that in which services were rendered.
- b. for all materials, tools, and other expendable equipment to the extent of 90 percent of the cost thereof, not later than the 20th day of the calendar month following that in which such items were delivered to the site of work, and the balance of the cost thereof not later than the 30th day following the completion of that part of the work in or on which such material, tools, or equipment are incorporated or used.
- c. To each of his subcontractors, not later than the 5th day following each payment to the Contractor, the respective amounts allowed the Contractor on account of the work performed by his subcontractors to the extent of such subcontractor's interest therein.

ARTICLE 27: GENERAL GUARANTEE

Neither the final certificate of payment nor any provision in the contract documents nor partial or entire occupancy of the premises by the Owner shall constitute an acceptance of work not done in accordance with the contract documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty workmanship or materials. The Contractor shall remedy any defects in the work and pay for any damage to other work resulting therefrom, which shall appear within a

period of one year (1) from the date of final acceptance of the work, unless a longer period is specified by the Owner. The Owner will give final notice of observed defects with reasonable promptness.

ARTICLE 28: COMPLETENESS OF THE WORK

In addition to the specified or described portions of the work, all other work and all other materials, equipment and labor of whatever description, necessary or required to complete the work, or for carrying out the full intent of the drawings and specifications, such work, labor, materials, and equipment shall be provided by the Contractor, and payment therefore shall be considered as having been included in the prices stipulated for the appropriate item of work listed in the bid.

ARTICLE 29: CARE OF THE WORK

The Contractor shall be responsible for all damages to persons or property that occur as a result of his fault or negligence in connection with the prosecution of the work and shall be responsible for the proper care and protection of all materials delivered and work performed until completion and final acceptance by the Owner, whether or not the same has been covered by partial payments made by the Owner.

ARTICLE 30: PROTECTION OF CONSTRUCTION FEATURES

The Contractor shall take adequate precautions to protect existing sidewalks, curbs, pavements, utilities, adjoining property and such incidentals, and to avoid damage thereto. The Contractor shall completely repair any damage at no additional expense to the Owner.

ARTICLE 31: SAFETY AND HEALTH REGULATIONS

These Contract Documents, and the joint and several phases of construction hereby contemplated, are to be governed, at all times, by the applicable provisions of the Federal law(s) including but not limited to the following:

1. Williams-Steiger Occupational Safety and Health Act, 1970, Public Law 92-596;
2. Part 1910 of the Occupational Safety and Health Standards, Chapter XVII of Title 29, Code of Federal Regulations;
3. This project is subject to all of the Safety and Health Regulations (CFR 29, Part 1926 and all subsequent amendments) as promulgated by the U.S. Department of Labor on June 24, 1974. Contractors are urged to become familiar with the requirements of these regulations.

In the event of any inconsistencies between the above laws and regulations and the provisions of these Contract Documents, the laws and regulations shall prevail.

ARTICLE 32: PROTECTION OF WORK AND PROPERTY - EMERGENCY

- a. The Contractor shall at all times safely guard the Owner's property from injury or loss in connection with this Contract. He shall at all times safely guard and protect his own work, materials incorporated into the work or stockpiled at the site, and that of adjacent property, from damage. The Contractor shall replace or make good any such damage, loss or injury.
- b. In case of an emergency which threatens loss or injury of property, and/or safety of life, the Contractor will be allowed to act, without previous instructions from the Owner, in a diligent manner. He shall notify the Owner immediately thereafter. Any claim for compensation by the Contractor due to such extra work shall be promptly submitted to the Owner for approval.
- c. Where the Contractor has not taken action but has notified the Owner of an emergency threatening injury to persons or damage to the work or to any adjoining property, he shall act as instructed or authorized by the Owner.
- d. The amount of reimbursement claimed by the Contractor on account of any Emergency action shall be determined in the manner provided elsewhere in the Contract Documents.

ARTICLE 33: FIRE PREVENTION AND PROTECTION

All State and municipal rules and regulations with respect to fire prevention, fire-resistant construction, and fire protection shall be strictly adhered to and all work and facilities necessary therefor shall be provided and maintained by the Contractor in an approved manner.

All fire protection equipment such as water tanks, hoses, pumps, extinguishers, and other materials, and apparatus, shall be provided for the protection of the contract work, temporary work, and adjacent property. Trained personnel experienced in the operation of all fire protection equipment and apparatus shall be available on the site whenever work is in progress, and at such other times as may be necessary for the safety of the public and the work.

ARTICLE 34: PROTECTION OF LIVES AND HEALTH

- a. In order to protect the lives and health of his employees under this Contract, the Contractor shall comply with all pertinent provisions of the "Manual of Accident Prevention in Construction", issued by the Associated General Contractors of America, Inc., and shall maintain an accurate record of all cases of death, occupational diseases, and injuries requiring medical attention or causing loss of time from work arising out of, and in the course of employment on the Contract work.
- b. The Contractor alone shall be responsible for the safety, efficiency, and adequacy of his plant, appliances, and methods, and for any damage which may result from their failure or their improper construction, maintenance, or operation.

ARTICLE 35: PROTECTION AGAINST HIGH WATER AND STORM

The Contractor shall take all precautions to prevent damage to work or equipment by high water or by storms. The Owner may prohibit the carrying out of work at any time when in his judgment high waters or storm conditions are unfavorable or unsuitable, or at any time regardless of the weather when proper precautions are not being taken to safeguard previously constructed work or work in progress.

In case of damage caused by the failure of the Contractor to take adequate precautions, the Contractor shall repair or replace equipment damaged and shall make such repairs or rebuild such parts of the damaged work as the Owner may require, at no additional cost to the Owner.

ARTICLE 36: FIRST AID TO INJURED

The Contractor shall keep in his office, ready for immediate use, all articles necessary for giving first aid to injured employees. He shall also provide arrangements for the immediate removal and hospital treatment of any employees injured on the work who require the same.

ARTICLE 37: HURRICANE PROTECTION

Should hurricane warnings be issued, the Contractor shall take every precaution to minimize danger to person, to the work and to adjacent property. These precautions shall include closing all openings, removing all loose materials, tools and equipment from exposed locations, and removing all scaffolding and other temporary work.

ARTICLE 38: USE OF PREMISES AND REMOVAL OF DEBRIS

The Contractor undertakes, at his own expense:

- a. To take every precaution against injuries to persons or damage to property.
- b. To store his apparatus, materials, equipment, and supplies in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work or any others.
- c. To place upon the work or any part thereof, only such loads as are consistent with the safety of that portion of the work.
- d. To clean frequently all refuse, scrap, and debris caused by his operations, so that the work site is maintained in a neat, workmanlike appearance.
- e. To effect all cutting, fitting, or patching of his work required to make the same conform to the drawings and specifications, and except with the consent of the Owner, not to cut or otherwise alter the work of any other Contractor.
- f. Before final payment, to remove all surplus materials falsework, temporary structures, including foundations thereof, plants of any description, and debris of any nature resulting from his operations, so that the site is left in a neat, orderly, and workmanlike condition.

ARTICLE 39: CORRECTION OF WORK

All work, materials, all processes of manufacture, and all methods of construction shall be at all times and places subject to the inspection of the Owner, who shall be the final judge of the quality and suitability of the work performed under this Contract. Should any of the work performed fail to meet with his approval, it shall be forthwith reconstructed, made good, replaced, and/or corrected as the case may be, by the Contractor, at his own expense. Rejected material shall be immediately removed from the site. If, in the opinion of the Owner, it is undesirable to replace, reconstruct, or correct any of the work not performed in accordance with the Contract Documents, the compensation to be paid to the Contractor shall be reduced by such amounts as in the judgment of the Owner shall be equitable.

ARTICLE 40: FAILURE TO REPAIR

Any emergency arising from the interruption of electric, gas, water, or sewer service due to the activities of the Contractor, shall be repaired by the Contractor as quickly as is possible. If and when, in the opinion of the Owner, the Contractor is not initiating repair work as expeditiously as possible upon notification to do so, the Owner may, at his own option, make the necessary repairs using his own forces or those of others. The cost of such repairs shall be subtracted from the payments due to the Contractor.

ARTICLE 41: WEATHER CONDITIONS

In the event of temporary suspension of the work, or during inclement weather, or whenever the Owner shall direct, the Contractor shall, and shall cause his subContractors to protect carefully his and their work and materials against damage or injury from the weather. If, in the opinion of the Owner, any work or materials are damaged or injured by reason of failure to protect them on the part of the Contractor, or any of his subContractors, or otherwise damaged or injured by the Contractor's negligence, or are found to be defective, such materials or work shall be removed and replaced at the expense of the Contractor.

ARTICLE 42: WORK IN COLD WEATHER

The Owner may determine when conditions are unfavorable for work and may order the work, or any portion thereof, suspended whenever, in his opinion, the conditions are not such as will insure first class work.

ARTICLE 43: BUS LINE INTERFERENCE

Whenever it may be necessary to interfere with any bus lines, notice shall be given to the corporation owning the same, and reasonable time will be given to said corporation to arrange the schedule for operation of the bus line, as it may be necessary.

ARTICLE 44: NIGHTWORK

Nightwork, or work on Saturdays, Sundays, or legal holidays requiring the presence of an engineer or inspector, will not be permitted except in case of emergency, and only upon the approval of the Owner.

Should it be necessary for the Owner to operate an organization for continuous nightwork or for emergency nightwork, the lighting, safety and other facilities which are deemed necessary shall be provided by the Contractor. Compensation for this work shall be considered as having been included in the prices stipulated for the appropriate items of work as listed in the bid, and no extra compensation will be paid by the Owner.

ARTICLE 45: LIGHTS, BARRIERS, WATCHMEN, AND INDEMNITY

The Contractor shall erect and maintain such barriers, lighting, warning lights, danger warning signals, and signs that will prevent accidents during the construction work and protect the work and insure the safety of personnel and the public at all times and places; the Contractor shall indemnify and protect the Owner and Engineer in every respect from injury or damage whatsoever caused by any act of neglect by the Contractor or his subContractors, or their servants or agents. In addition to the above, when and as necessary, or when required by the Owner, the Contractor shall post signs and employ watchmen or flagmen, for the direction of traffic at the site and for excluding at all times unauthorized persons from the work site, for which the Contractor shall be paid no additional compensation. The Contractor shall be responsible for excluding at all times from the land within the easement areas, all persons not directly connected with the work.

All work occurring on State of Rhode Island highways shall be clearly identified, protected and the public's safety ensured by erection of signs, barriers and all other provisions as outlined in the Manual on Uniform Traffic Control Devices for Streets and Highways; issued by U. S. Department of Transportation, Federal Highway Administration, 1978; Part VI, Traffic Controls for Streets and Highway Construction and Maintenance Operations.

ARTICLE 46: LOADING

No part of the structures involved in this Contract shall be loaded during construction with a load greater than it is calculated to carry with safety. Should any accidents or damage occur through any violation of this requirement, the Contractor will be held responsible under his Contract and bond.

ARTICLE 47: DISPOSAL OF MATERIALS

The materials used in the construction of the work, shall be deposited in such manner so they will not endanger persons or the work, and so that free access may be had at any time to all hydrants and gates in the vicinity of the work. The materials shall be kept trimmed up so that as little inconvenience as possible to the public or adjoining tenants is caused.

ARTICLE 48: FINISHING AND CLEANING UP

In completing his operations, the Contractor shall immediately remove all surplus material, tools, and other property belonging to him, leaving the entire street or surroundings free and clean and in good order, at no additional expense to the Owner. The Contractor shall exercise special care in keeping the rights-of-way and private lands upon which work

is performed free and clean of all debris, and shall remove all tools and other property when they are not in use.

In case the Contractor fails or neglects to promptly remove all surplus materials, tools, and incidentals after backfilling, leaving the street or surrounding area clean and free of debris, and do the required repaving when ordered, the Owner may, after 24 hours notice, cause the work to be done and the cost thereof deducted from any payment due to the Contractor.

ARTICLE 49: SPIRITUOUS LIQUORS

The Contractor shall neither permit nor suffer the introduction of spirituous liquors upon the work embraced in this Contract, nor the use of the same.

ARTICLE 50: DUST CONTROL

The Contractor shall exercise every precaution and means to prevent and control dust arising out of all construction operations from becoming a nuisance to abutting property owners or surrounding neighborhoods. Pavements adjoining the pipe trench shall be kept broomed off and washed clean of excess materials wherever and whenever directed. Repeated daily dust control treatment shall be provided to satisfactorily prevent the spread of dust until permanent pavement repairs are made and until earth stockpiles have been removed, and all construction operations that might cause dust have been completed. No extra payment will be made for these dust control measures, compensation shall be considered to be included in the prices stipulated for the appropriate items as listed in the bid.

If so directed by the Owner, the Contractor shall furnish and apply calcium chloride for supplemental control of dust.

Calcium chloride shall conform to the requirements of AASHTO M 144 (ASTM D-98) except that the pellet form and the flake form shall be equally acceptable.

Calcium chloride shall be applied only at the locations, at such times and in the amount as may be directed by the Owner. It shall be spread in such manner and by such devices that uniform distribution is attained over the entire area on which it is ordered placed.

There will be no separate payment for this work. The cost of the work shall be included in the price bid for the various other items of work.

PART III

The rights and obligations of the OWNER under this Contract shall include, but not be limited to the following:

ARTICLE 51: THE OWNER'S AUTHORITY

The Owner shall give all orders and directions contemplated under this Contract and specifications relative to the execution of the work.

The Owner shall determine the amount, quality, acceptability, and fitness of the several kinds of work and materials which are to be paid for under this Contract and shall decide all questions which may arise in relation to said work and the construction thereof.

The Owner's estimates and decisions shall be final and conclusive, except as herein otherwise expressly provided. In case any question shall arise between the parties hereto relative to said Contract or specifications, the determination or decision of the Owner shall be a condition precedent to the right of the Contractor to receive any money or payment for work under this Contract affected by such questions. The Owner shall decide the meaning and intent of any portion of the specifications and of any plans or drawings where the same may be found to be obscure or be in dispute. Any differences or conflicts in regard to their work which may arise between the Contractor and other Contractors performing work for the Owner, shall be adjusted and determined by the Owner.

ARTICLE 52: ALL WORK SUBJECT TO CONTROL BY THE OWNER

a. In the performance of the work, the Contractor shall abide by all orders, directions, and requirements of the Owner, and shall perform all work to the satisfaction of the Owner, and at such times and places, but such methods, and in such manner and sequence as he may require. The Owner shall determine the amounts, quality, acceptability, and fitness of all parts of the work. The Owner shall interpret the drawings, specifications, contract documents, all other documents, and the extra work orders. The Owner shall also decide all other questions in connection with the work. The Contractor shall employ no plant, equipment, materials, methods or men to which the Owner objects and shall remove no plant, materials, or equipment or other facilities from the work site without the Owner's permission. Upon request, the Owner will confirm in writing any oral order, direction, requirement, or determination.

b. Inspectors shall be authorized to inspect all work done and materials furnished. Such inspection may extend to all parts of the work and to the preparation or manufacture of the materials to be used. The presence or absence of an inspector shall not relieve the Contractor from any requirements of the Contract. In case of any dispute arising between the Contractor and the inspector as to materials furnished or the manner in which the work is being executed, the inspector shall have the authority to reject material or suspend work until the question has been decided by the Owner. The inspector shall not be authorized to revoke, alter, enlarge, relax, or release any requirement of these specifications, nor to approve or accept any portion of the work, nor to issue instructions contrary to the drawings and specifications. The inspector shall in no case act as foreman or perform other duties for the Contractor, or interfere with the management of the work by the latter. Any advice which the inspector may give the Contractor shall in no way be construed as binding the Owner, or the Engineers in any way, nor releasing the Contractor from the fulfillment of the terms of the Contract.

ARTICLE 53: THE OWNER'S CONTROL NOT LIMITED

The enumeration in this Contract of particular instances in which the opinion, judgment, discretion, or determination of the Owner shall control or in which work shall be performed to his satisfaction or subject to his approval or inspection, shall not imply that only matters similar to those enumerated shall be so governed and performed, but without exception all the work shall be so governed and performed.

ARTICLE 54: RIGHT OF THE OWNER TO TERMINATE THE CONTRACT

In the event that any of the provisions of this Contract are violated by the Contractor, or any of his subcontractors, the Owner may serve written notice upon the Contractor and the Surety of its intention to terminate the Contract, such notice to contain the reasons for such intention to Terminate the Contract. If, within ten days (10) such violation or delay shall not cease and satisfactory arrangement or correction made, the Contract shall, at the expiration of the ten days, cease and immediately serve notice thereof upon the Surety and the Contractor, and the Surety shall have the power to take over and perform the Contract, provided, however, that if the Surety does not commence performing thereof within ten days (10) from the date of mailing to such Surety a Notice of Termination, the Owner may take over the work and prosecute the same to completion by Contract or force account at the expense of the Contractor, and the Contractor and his Surety shall be liable to the Owner for any excess cost occasioned the Owner thereby.

ARTICLE 55: TERMINATION FOR CONVENIENCE

a. The performance of work under this Contract may be terminated by the Owner in accordance with this clause in whole, or from time to time in part, whenever the Owner shall determine that such terminate shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which performance of work under the Contract is terminated, and the date upon which such termination becomes effective.

b. After receipt of a Notice of Termination, and except as otherwise directed by the Owner, the Contractor shall:

1. Stop work under the Contract on the date and to the extent specified in the Notice of Termination;
2. Place no further orders or subcontracts for materials, services, or facilities except as may be necessary for completion of such portion of the work under the Contract as is not terminated;
3. Terminate all orders and subcontracts to the extent that they relate to the performance of work terminated by the Notice of Termination;
4. Assign to the Owner, in the manner, at the times, and to the extent directed by the Owner, all of the right, title and interest of the Contractor under the orders and subcontracts so terminated. In which case, the Owner shall have the right, in its discretion, to settle, or pay any or all claims arising out of the termination of such orders and subcontracts;
5. Settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts, with the approval or ratification of the Owner to the extent he may require, which approval or ratification shall be final for all the purposes of this clause;
6. Transfer title to the Owner, and deliver in the manner, at the times, and to the extent, if any, directed by the Owner,

(i) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced as a part of, or acquired in connection with the performance of the work terminated by the Notice of Termination, and

(ii) the completed or partially completed plans, drawings, information, and other property which, if the Contract had been completed, would have been required to be furnished to the Owner.

7. Use his best efforts to sell, in the manner, at the times, to the extent, and at the price or prices directed or authorized by the Owner, any property of the types referred to in (6) above; provided, however, that the Contractor (i) shall not be required to extend credit to any purchaser, and (ii) may acquire any such property under the conditions prescribed and at a price or prices approved by the Owner: And, provided further, that the proceeds of any such transfer or disposition shall be applied in reduction of any payments to be made by the Owner to the Contractor under this Contract or shall otherwise be credited to the price or cost of the work covered by this Contract or paid in other such manner as the Owner may direct;

8. Complete performance of such part of the work as shall not have been terminated by the Notice to Termination; and

9. Take such action as may be necessary, or as the Owner may direct, for the protection and preservation of the property related to this Contract which is in the possession of the Contractor and in which the Owner has or may acquire an interest.

C. After receipt of a Notice of Termination, the Contractor shall submit to the Owner his termination claim, in the form and with the certification prescribed by the Owner. Such claim shall be submitted promptly but in no event later than one year from the effective date of termination, unless one or more extensions in writing are granted by the Owner upon request of the Contractor made in writing within such one-year period or authorized extension thereof. However, if the Owner determines that the facts justify such action, he may receive and act upon any such termination claim at any time after such one-year period or extension thereof. Upon failure of the Contractor to submit his termination claim within the time allowed, the Owner may determine, on the basis of information available to him, the amount, if any, due to the Contractor by reason of the termination and shall thereupon pay to the Contractor the amount so determined.

d. Subject to the provisions of paragraph (c), the Contractor and the Owner may agree upon the whole or any part of the amount or amounts to be paid to the Contractor by reason of the total or Partial termination of work pursuant to this clause which amount or amounts may include a reasonable allowance for profit on work done: Provided, that such agreed amount or amounts, exclusive of Settlement costs, shall not exceed the total contract price as reduced by the amount of payments otherwise made and as further reduced by the contract price or work not terminated. The Contract shall be amended accordingly, and the Contractor shall be paid the agreed amount. Nothing in Paragraph (e) of this clause, prescribing the amount to be paid to the Contractor in the event of failure of the Contractor and the Owner to agree upon the whole amount to be

paid to the Contractor by reason of the termination of work pursuant to this clause, shall be deemed to limit, restrict, or otherwise determine or affect the amount or amounts which may be agreed upon to be paid to the Contractor pursuant to this Paragraph (d).

E. In the event of the failure of the Contractor and the Owner to agree as provided in Paragraph (d) upon the whole amount to be paid to the Contractor by reason of the termination of work pursuant to this clause, the Owner shall determine, on the basis of information available to him, the amount, if any, due to the Contractor the amounts determined as follows:

1. With respect to all contract work performed prior to the effective date of the Notice of Termination, the total (without duplication of any items) of:

i. The cost of such work;

ii. The cost of settling and paying claims arising out of the termination of work under subcontracts or orders provided in Paragraph (b) (5) above, exclusive of the amounts paid or payable on account of supplies or materials delivered or services furnished by the subcontractor prior to the effective date of the Notice of Termination of work under this Contract, which amounts shall be included in the cost on account of which payment is made under (i) above, and

iii. A sum, as profit on (i) above, determined by the Owner to be fair and reasonable: Provided, however, that if it appears that the Contractor would have sustained loss on the entire Contract had it been completed, no profit shall be included or allowed under this subdivision (iii) and an appropriate adjustment shall be made reducing the amount of the settlement to reflect the indicated rate of loss; and

2. The reasonable cost of the preservation and protection of property incurred pursuant to Paragraph (b) (9); and any other reasonable cost incidental to termination of work under this Contract, including expense incidental to the determination of the amount due to the Contractor as the result of the termination of work under this Contract.

The total sum to be paid to the Contractor under (1) above shall not exceed the total contract price as reduced by the amount of payments otherwise made and as further reduced by the contract price of work not terminated. Except for normal spoilage, and except to the extent that the Owner shall have otherwise expressly assumed the risk of loss, there shall be excluded from the amounts payable to the Contractor under (1) above, the fair value, as determined by the Owner, of property which is destroyed, lost, stolen, or damaged so as to become undeliverable to the Owner, or to a buyer pursuant to Paragraph (b) (7).

F. The Contractor shall have the right to dispute under the clause of this Contract entitled "Remedies" from any determination made by the Owner under Paragraph (c) or (e) above, except that, if the Contractor has failed to submit his claim within the time provided in Paragraph (c) above and has failed to request extension of such time, he shall have no such right of appeal. In any case where the Owner has made a determination of the amount due under Paragraph (c) or (e) above, the Owner shall pay to the Contractor the following: (1) if there is no right of appeal hereunder or if no timely appeal has been taken, the amount so determined by the Owner or (2) if a "Remedies" proceeding is initiated, the amount finally determined in such "Remedies" proceeding.

g. In arriving at the amount due the Contractor under this clause, there shall be deducted (1) all unliquidated advance or other payments on account theretofore made to the Contractor, applicable to the terminated portion of this Contract, (2) any claim which the Owner may have against the Contractor in connection with this Contract, and (3) the agreed price for, or the proceeds of sale of any materials, supplies, or other things kept by the Contractor or sold, pursuant to the provisions of this clause, and not otherwise recovered by or credited by the Owner.

h. If the termination hereunder be partial, prior to the settlement of the terminated portion of this Contract, the Contractor may file with the Owner a request in writing for an equitable adjustment of the price or prices specified in the Contract relating to the continued portion of the Contract (the portion not terminated by the Notice of Termination) and such equitable adjustment as may be agreed upon shall be made in such price or prices; however, nothing contained herein shall limit the right of the Owner and the Contractor to agree upon the amount or amounts to be paid to the Contractor for the completion of the continued portion of the Contract when said Contract does not contain an established contract price for such continued portion.

ARTICLE 56: RIGHTS OF ACCESS

Nothing herein contained or shown on the drawings shall be construed as giving the Contractor exclusive occupancy of the work area. The Owner or any other Contractors employed by him, the various utility companies, Contractors or subcontractors employed by State or Federal agencies, or any other agencies involved in the general project or upon public rights-of-way, may enter upon or cross the area of work or occupy portions of the area as is directed or necessary.

When the territory of one contract is the convenient means of access to the other, the Contractor shall arrange his work in such a manner as to permit such access to the other and prevent unnecessary delay to the work as a whole.

ARTICLE 57: RIGHTS-OF-WAY AND SUSPENSION OF WORK

Land and rights-of-way for the purpose of this Contract shall be furnished by the Owner to the extent shown on the drawings; the Owner will use due diligence in acquiring said lands and rights-of-way as speedily as possible. If, however, lands or rights-of-way cannot be obtained before work on the project begins, the Contractor shall begin his work upon such

land or rights-of-way as have been previously acquired by the Owner, and no claims for damages whatsoever will be allowed by reason of the delay in obtaining the remaining land and rights-of-way. Should the Owner be prevented or enjoined from proceeding with the work, or from authorizing its prosecution, either before or after the commencement by reason of litigation, or by reason of its inability to procure the lands or rights-of-way for the said work, the Contractor shall not be entitled to make or assert a claim for damages by reason of the said delay, or to withdraw from the Contract except by consent of the Owner. Time for completion of work will be extended to such time as the Owner determines will compensate for the time lost by such delay, such determination to be set forth in writing.

ARTICLE 58: CONFORMANCE WITH DIRECTIONS

The Owner may make alterations in the line, grade, plan, form, dimension, or materials of the work, or any part thereof, either before or after the commencement of construction. Should such alterations diminish the quantity included in any item of work to be done and paid for at a unit price, the Contractor shall have no claim for damages or for anticipated profits on the work that thus may be dispensed with. If they increase the quantity included in any such item, such increase shall be paid for at the stipulated prices.

ARTICLE 59: INTERPRETATION OF THE DRAWINGS AND SPECIFICATIONS

Except for the Contractor's executed set, all drawings and specifications are the property of the Owner. The Owner will furnish the Contractor, without charge, three (3) sets of the drawings and specifications. Additional sets will be furnished upon request, at actual cost of reproduction. Such drawings and specifications are not to be used on other work and those sets in usable condition shall be returned to the Owner upon request at the completion of cessation of the work or termination of the Contract. The Contractor shall keep one (1) copy of the drawings and specifications at the work site at all times and shall give the Owner and their representatives access thereto. Anything on the drawings and not mentioned in the specifications, or anything in the specifications that is not shown on the drawings shall have the same force and effect as if mentioned in both. In case of conflict or inconsistency between the drawings and the specifications, the specifications shall take precedence. Any discrepancy in the figures and the drawings shall be immediately submitted to the Owner for decision and the decision of the Owner shall be final.

In case of differences between small and large scale drawings, the large scale drawings shall take precedence.

ARTICLE 60: SUSPENSION OF WORK

a. The Owner may order the Contractor in writing to suspend, delay, or interrupt all or any part of the work for such period of time as he may determine to be appropriate for the convenience of the Owner.

b. If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted by an act of the Owner in administration of this Contract, or by his failure to act within the time specified in this Contract

(or if no time is specified, within a reasonable time), an adjustment shall be made for any increase in the cost of performance of this Contract (excluding profit) necessarily caused by such unreasonable suspension, delay, or interruption and the Contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent (1) that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor or (2) for which an equitable adjustment is provided for or excluded under any other provision of this Contract.

c. No claim under this clause shall be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Owner in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order), and (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of such suspension, delay or interruption, but not later than the date of final payment under the Contract.

ARTICLE 61: INSPECTION

The authorized representatives and agents of the Owner shall be permitted to inspect all work materials, payrolls, records of personnel, invoices for materials, and other relevant data and records.

PART IV

ARTICLE 62: SUBCONTRACTORS

The Contractor may utilize the services of specialty subcontractors on those parts of the work which, under normal contracting practices, are performed by specialty subcontractors.

The Contractor shall not award work to any subcontractor other than those listed in his bid, without the prior written approval of the Owner, which approval will not be given until the Contractor submits a written statement concerning the proposed award to the subcontractor, which statement shall contain such information as the Owner may require.

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work, to bind the subcontractors to the contract documents insofar as applicable to the subcontract work and to give the Contractor the same power as regards to terminating any subcontract that the Owner may exercise over the Contractor under any provisions of the contract documents.

Nothing contained in this Contract shall create any contractual relationship between the Owner and any subcontractor.

ARTICLE 63: MUTUAL RESPONSIBILITY OF CONTRACTORS

If, through acts of neglect on the part of the Contractor, any other Contractor or any subcontractor shall suffer loss or damage to the work, the Contractor agrees to settle with such other Contractor or subcontractor by agreement or arbitration. If such other Contractor or subcontractor shall assert any claim against the Owner on account of any damage alleged to have been sustained, the Owner shall notify the Contractor who shall indemnify and save harmless the Owner against any such claim.

ARTICLE 64: ASSIGNMENTS

The Contractor shall not assign the whole or any part of this Contract or any monies due or to become due hereunder without the written consent of the Owner. In case the Contractor assigns all or part of any monies due or to become due under this Contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any monies due or to become due to the Contractor shall be subject to prior claims of all persons, firms, or corporations for services rendered or materials supplied for the performance of the work called for in this Contract.

ARTICLE 65: SEPARATE CONTRACTS

The Owner reserves the right to let other contracts in connection with the construction of the contemplated work of the project, or contiguous projects of the Owner. The Contractor, therefore, will afford to any such other Contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, will properly connect and coordinate his work with theirs, and will not commit or permit any act which will interfere with the performance of their work.

The Contractor shall coordinate his operations with those of other Contractors. Cooperation will be required in the arrangement for storage of materials and in the detailed execution of the work. Failure by the Contractor to keep informed on the progress or defective workmanship by others, shall be construed as acceptance by him of the status of the work as being satisfactory for proper coordination with and performance of his own work.

ARTICLE 66: WORK BY OTHERS

The Owner reserves the right to do any other work which may be connected with, or become a part of, or be adjacent to the work embraced by this Contract, at any time, by Contract or otherwise. The Contractor shall not interfere with the work of such others as the Owner may employ, and shall execute his own work in such a manner as to aid in the execution of the work of others as may be required. No backfilling of trenches or excavations will be permitted until such work by the Owner is completed.

PART V

ARTICLE 67: WAGE UNDERPAYMENTS AND ADJUSTMENTS

The Contractor agrees that in case of underpayment of wages to any worker on the project under this Contract by the Contractor or any of his subcontractors, the OWNER will withhold from the Contractor out of payments due to him, an amount sufficient to pay such worker the difference between the wages required to be paid under this contract and the wages actually paid such worker for the total number of hours worked, and that the OWNER may disburse such amount so withheld by it for, and on account of the Contractor to the employee to whom such amount is due. The Contractor further agrees that the amount withheld pursuant to this article may be in addition to the percentage to be retained by the OWNER pursuant to other provisions of this Contract.

ARTICLE 68: PAYMENT OF EMPLOYEES

The Contractor and each of his subcontractors shall pay each of their employees engaged in the work on the project under this Contract in full, in cash, and not less than once a week, less legally required deductions, provided, that when circumstances render payment in cash unfeasible or impracticable, then payment by check may be effected upon consideration that funds are made available in a local bank and checks may be cashed without charge, trade requirements, or inconvenience to the worker.

ARTICLE 69: NON-DISCRIMINATION IN EMPLOYMENT

In connection with the performance of the work under this Contract, the Contractor agrees not to discriminate against employee because of race, religion, color, or national origin. The aforesaid provisions shall include but not be limited to the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rate of pay or other forms of compensation and selection for training, including apprenticeship.

ARTICLE 70: APPRENTICES

Apprentices shall be permitted to work only under a bona fide apprenticeship program registered with a State Apprenticeship Council which is recognized by the Federal Committee on Apprenticeship, United States Department of Labor; or if no such Council exists in a State, under a program registered with the Bureau of Apprenticeship, United States Department of Labor.

PART VI

ARTICLE 71: SHOP OR SETTING DRAWINGS

- a. The Contractor shall submit promptly to the Owner six (6) copies of each shop or setting drawing prepared in accordance with a schedule predetermined by the Contractor. After examination of such drawings by the Owner, and the return thereof, if resubmission is required, the Contractor shall make such corrections to the drawings as have been indicated and shall furnish the Owner with six (6) corrected copies. Regardless of corrections made in or approval given to such drawings by the Owner, the Contractor will, nevertheless, be responsible for the accuracy of such drawings and for their conformity to the drawings and specifications, unless he notifies the Owner in Writing of any deviations at the time he furnishes the drawings.
- b. Shop drawings of all fabricated work shall be submitted to the Owner for approval and no work shall be fabricated by the Contractor save at his own risk until approval has been given by the owner. The Special Conditions define the shop drawings required for this project.
- c. The Contractor shall submit all shop and setting drawings on dates sufficiently in advance of requirements to enable the Owner ample time for reviewing the same, including time for correcting, resubmission and reviewing, if necessary, and no claim for delay will be granted the Contractor by reason of his failure in this respect.

d. All shop drawings submitted must bear the stamp of the Contractor as evidence that the drawings have been checked by him. Any drawings submitted without this stamp of approval will not be considered and will be returned to the Contractor for resubmissions. If the shop drawings show deviations from the requirements of the Contract Documents because of standard shop practice or other reason, the Contractor shall make specific mention of such variation in his letter of transmittal to the Owner, in order that an acceptable, suitable action may be taken for proper adjustment; otherwise the Contractor will not be relieved of the responsibility for executing the work in accordance with the Contract Documents even though the shop drawings have been approved.

e. Where shop drawings are submitted by the Contractor that indicate a departure from the Contract which the Owner deems to be a minor adjustment in his interest and not involving a change in the contract price or extension of time, the Owner may approve the drawings but the approval will contain in substance, the following:

"The modification shown on the attached drawings is approved in the interest of the Owner to effect an improvement for the project and is ordered with the understanding that it does not involve any change in the contract price or an extension of time, that it is subject generally to all contract stipulations and covenants; and that it is without prejudice to any rights of the Owner under the contract and bond or bonds."

f. The approval of the shop drawings will be general and shall not relieve the Contractor from the responsibility for adherence to the Contract, nor shall it relieve him of the responsibility for any error which may exist.

g. The Contractor agrees to hold the Engineer and the Owner harmless and defend them against damages or claims for damages arising out of injury to others or property of third persons which result from errors on shop, working or setting drawings whether or not they have been approved by the Engineer and/or the Owner.

ARTICLE 72: WORK TO BE ACCOMPLISHED IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS

The work, during its progress and its completion, shall conform to the lines and grades shown on the drawings and to the directions given by the Owner from time to time, subject to such modifications or additions as he shall determine to be necessary during the execution of the work; and in no case will any work be paid for in excess of such requirements. The work shall also be accomplished in accordance with the data in these specifications.

ARTICLE 73: CONTRACTOR TO CHECK DIMENSIONS AND SCHEDULES

The Contractor will be required to check all dimensions and quantities shown on the drawings or schedules given to him by the Owner, and shall notify the Owner of all errors therein which he may discover by examining and checking the same. The Contractor shall not take advantage of any error or omissions in these specifications, drawings, or schedules. The Owner will furnish all instructions should such error or omissions be discovered,

and the Contractor shall carry out such instructions as if originally specified.

ARTICLE 74: PLANIMETER

For estimating quantities in which the computation of areas by analytic and geometric methods would be comparatively laborious, it is stipulated and agreed that the planimeter shall be considered an instrument of precision adapted to the measurement of such areas.

ARTICLE 75: ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS

The Contractor will be furnished additional instructions and detail drawings as necessary to carry out the work included in the Contract. The additional drawings and instructions thus supplied to the Contractor will coordinate with the Contract Documents and will be so prepared that they can be reasonably interpreted as part thereof. The Contractor shall carry out the work in accordance with the additional detail drawings and instructions. The Contractor and the Owner prepare jointly a schedule fixing the respective dates for the submission of shop drawings, the beginning of manufacture, testing, and installation of materials, supplies, and equipment, and the completion of the various parts of the work; each schedule to be subject to change from time to time in accordance with the progress of the work.

ARTICLE 76: MATERIALS, SERVICES AND FACILITIES

It is understood that, except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, superintendence, temporary construction of every nature, and all other services and facilities of every nature whatsoever, necessary to protect, execute, complete, and deliver the work within the specified time. If approved by the Owner, any work necessary to be performed after regular hours, on Saturdays, Sundays, or legal holidays, shall be performed by the Contractor without additional expense to the Owner.

ARTICLE 77: CONTRACTOR'S TITLE TO MATERIALS

No material, supplies, or equipment for the work shall be purchased by the Contractor or any subcontractor, subject to any chattel mortgage or under a conditional sale or other agreement by which an interest therein or in any part thereof is retained by the seller or supplier. The Contractor warrants good title to all material, supplies, and equipment installed or incorporated in the work and further warrants upon completion of all work, to deliver the premises, together with all improvements and appurtenances constructed or placed thereon by him, to the Owner free from any claims, liens, or charges, or encumbrances and further agrees that neither he nor any person, firm or corporation furnishing any material or labor for any work covered by this Contract shall have the right to a lien upon the premises or any improvement or appurtenance thereon.

ARTICLE 78: INSPECTION AND TESTING OF MATERIALS

All materials and equipment used in the construction of the project shall be new and of current manufacture. Testing will be done in accordance with accepted standards and as directed by the Owner; the laboratory or inspection agency shall be selected by the Owner. Except as specified elsewhere in these specifications, the Owner will pay for laboratory inspection. All materials and workmanship shall be subject to inspection, examination, and testing by the Owner at any and all times during manufacture and/or construction and at any and all places where such manufacture and or construction is carried on, to establish conformance with these specifications and suitability for uses intended. Without additional charge, the Contractor shall furnish promptly all reasonable facilities, labor, and materials necessary to make tests so required safe and convenient. He shall also furnish and mill, factory, or other such tests based on the standards and Tentative Standards of the American Society for Testing Materials as required by the Owner.

ARTICLE 79: DEFECTIVE MATERIALS

No materials shall be laid or used which are known, or may be found to be in any way defective. Any materials found to be defective at the site of work or upon installation shall be replaced by the Contractor at his own expense. Notice shall be given to the Owner of any defective or imperfect material. Defective or unfit material found to have been laid, shall be removed and replaced by the Contractor with sound and unobjectionable material without additional cost to the Owner.

ARTICLE 80: PATENTS

a. The Contractor shall hold and save the Owner harmless from liability of Any nature or kind, including cost and expenses for, or on account of, any patented or unpatented invention, process, article, or appliance manufactured or used in the Contract, including its use by the Owner.

b. License and/or royalty fees for the use of a process which is authorized by the Owner must be reasonable, and paid to the holder of the patent, or his authorized agent, directly by the Contractor.

c. If the Contractor uses any design, device or material covered by letters, patent, or copyright, he shall provide for such use by suitable agreement with the Owner of such patent or copyrighted design, device, or material.

d. It is mutually agreed and understood that, without exception, the contract prices shall include all royalties, license fees, or costs arising out of the use of such process, design, device, or materials, in any way involved in the work. The Contractor and/or his Surety shall indemnify and save the Engineer and the Owner harmless from all claims for infringement by reason of use of such patented material, device or design, in connection with the work under this Contract, and shall indemnify the Engineer and the Owner for any cost, expense, or damage which it may be obligated to pay for reason of such infringement at any time during the prosecution of the work.

ARTICLE 81: "OR APPROVED EQUAL CLAUSE"

a. Whenever a material or article required is specified or shown on the drawings by using the name of the proprietary product or of a particular manufacturer or vendor, any material or article which will perform adequately the duties imposed by the general design may be considered equal and satisfactory providing the material or article so proposed is of equal substance and function in the Owner's opinion. It shall not be purchased or installed without his written approval. In all cases, new material shall be used on the project.

b. If two or more brands, makes of material, devices or equipment are shown or specified, each should be regarded as the approved equal of the other. Any other brand, make or material, device or equipment, which, in the opinion of the Owner or his authorized agent, is the recognized approved equal of that specified, considering quality, workmanship, and economy of operation, and is suitable for the purpose intended, may be accepted.

c. If any other material or article is substituted for items shown or specified, the project must result in a savings in the contract price and the Contractor shall submit evidence that the substitute product is equal. Upon approval of the substitute product, the Owner will issue a deductive change order.

d. If an equipment manufacturer must have a specified period of experience with his product, equipment which does not meet with the specified experience period may, at the option of the owner, be considered if the equipment supplier or manufacturer is willing to provide a bond or cash deposit for the duration of the specified time period which will guarantee replacement of that equipment in the event of failure.

PART VII

ARTICLE 82: INSURANCES

The Contractor shall be responsible for maintaining insurance coverage in force for the life of this Contract of the kind and adequate amounts to secure all of his obligations under this Contract and with insurance companies licensed to write such insurance in the State of Rhode Island and acceptable to the Owner. The kinds and amounts of such insurance carried shall not be less than the kinds and amounts of insurance coverage designated in the Insurance Requirements, and the Contractor agrees that the stipulation herein of the kinds and minimum amounts of coverage or the acceptance by the Owner of certificates indicating the kinds and limits of coverage shall in no way limit the liability of the Contractor to any such kinds and amounts of insurance coverage. All policies issued shall indemnify and save harmless the Owner, the Engineer, and their agents or representatives from any and all claims for damages arising out of the Contract, to either persons or property.

Policies and certificates of all insurance shall be submitted to the Owner by the Contractor prior to preparation of the construction contract. In the event that the form of any policy or certificate of the amount of the insurance of the companies writing the same are not satisfactory to the Owner, the Contractor shall secure other policies or certificates in form and amount and with such companies that are satisfactory to the Owner.

The Contractor shall not cause policies to be cancelled or permit them to lapse and all insurance policies shall include a clause to the effect that the policy shall not be subject to cancellation or a reduction in the required limits of liability amounts of insurance until notice has been sent by registered mail to the Owner, stating when, not less than ten (10) days thereafter, such cancellation or reduction shall be effective. All certificates of insurance shall contain true transcripts from the policy, authenticated by the proper officer of the insurer evidencing in particular, those insured, the extent of the insurance, the location and operations to which the insurance applies the expiration date, and the above-mentioned notice of cancellation clause.

The Contractor shall be responsible for the provision of identical insurance coverages for all his subcontract operations and, in the event that the Contractor's policies do not cover each and every subcontractor, certificates of insurance issued on policies by companies that are acceptable to the Owner covering each and every subcontractor shall be filed under the Owner prior to the commencement of such subcontract operations. All insurance specified in this Contract shall be provided by the Contractor, at no additional expense to the Owner.

PART VIII

ARTICLE 83: COMPENSATION TO BE PAID TO THE CONTRACTOR

a. The Owner will pay and the Contractor shall receive as full compensation for everything furnished and done by the Contractor under this Contract, the unit prices and lump sum prices set opposite the respective items in the accepted bid form herein contained, and payment for approved extra work. The cost of all work required not specifically included in any items herein mentioned, and also for all loss or damage arising out of the nature of the work aforesaid or from the action of the elements, or from any unforeseen obstruction or difficulty encountered in the prosecution of the work and for all risks of every description connected with the work, and for all expenses incurred by or in consequence of the suspension or discontinuance of the work as herein specified, and for assuming all duties, and liabilities, herein required, and for well and faithfully completing the work, and the whole thereof, as herein provided, shall be the responsibility of the Contractor.

b. The amount of the Contract (accepted bid prices) listed in the bid is based on the estimated quantities and the unit and/or lump sum price as set forth in the bid. It is understood and agreed that the Contractor will accept as payment the actual measured quantities at the unit and/or lump sum price as set forth in the accepted bid.

c. The estimated quantities given in the bid proposal for the various items of work are given for the purpose of comparing the bids offered for the work under this Contract and if it is found in the performance of the Contract work that any or all of the said estimated quantities are not even approximately correct the Contractor shall have no claim for anticipated profits, or for loss of profit, or for increase in prices as listed in the accepted bid because of the difference between the quantities of the various items of work actually done and the estimated quantities stated in the accepted bid.

d. No payment or compensation will be made to the contractor for damages because of hindrance or delay from any cause in the progress of the work, whether such hindrances or delays be avoidable or unavoidable.

ARTICLE 84: PAYMENTS TO CONTRACTOR

a. At least ten (10) days before each progress payment falls due (but not more often than once a month), the CONTRACTOR shall submit to the OWNER a partial payment estimate filled out and signed by the CONTRACTOR covering the WORK performed during the period covered by the partial payment estimate and supported by such data as the OWNER may reasonably require. If payment is requested with the OWNER'S permission on the basis of materials and equipment not incorporated in the WORK but delivered and suitably stored at or near the site, in accordance with the manufacturers' recommendation and as required by the Owner, the partial payment estimate shall also be accompanied by such supporting data satisfactory to the OWNER as will establish the OWNER'S title to the material and equipment and protect his interest therein, including applicable insurance. The OWNER will within ten (10) days after receipt of each partial payment estimate either indicate in writing his approval or return the partial payment estimate to the CONTRACTOR indicating in writing his reasons for refusing to approve payment. In the latter case, the CONTRACTOR may make the necessary corrections and resubmit the partial payment estimate. The OWNER will within thirty (30) days of presentation to him of an approved partial payment estimate pay the CONTRACTOR a progress payment on the basis of the approved partial payment estimate.

b. Removed.

c. With each partial payment estimate, the CONTRACTOR shall certify in writing that the project AS-BUILT DRAWINGS are being maintained accurately and currently. Said certificate shall be signed by the CONTRACTOR'S SUPERINTENDENT and the CONTRACTOR'S ENGINEER or SURVEYOR. Any payment estimate not having said certification attached will be subject to refusal of payment.

d. Prior to SUBSTANTIAL COMPLETION, the OWNER, with the approval and concurrence of the CONTRACTOR, may use any completed or substantially completed portions of the WORK. Such use shall not constitute an acceptance of such portions of the WORK.

e. The OWNER shall have the right to enter the premises for the purpose of doing work not covered by the CONTRACT DOCUMENTS. This provision shall not be construed as relieving the CONTRACTOR of the sole responsibility for the care and protection of the WORK or the restoration of any damaged WORK except such as may be caused by agents or employees of the OWNER.

f. Upon completion and acceptance of the WORK, the OWNER shall issue a certificate attached to the final payment request that the WORK has been accepted by him under the conditions of the CONTRACT DOCUMENTS. The entire balance found to be due the CONTRACTOR, including the retained percentages but except such sums as may be lawfully retained by the OWNER shall be paid to the CONTRACTOR within forty-five (45) days of completion and acceptance of the WORK.

g. The CONTRACTOR will indemnify and save the OWNER or the OWNER'S REPRESENTATIVE harmless from all claims growing out of the lawful demands of SUBCONTRACTORS, laborers, workmen, mechanics, materialmen, and furnishers of machinery and parts thereof, equipment, tools and all supplies incurred in the furtherance of the performance of the WORK. The CONTRACTOR shall at the OWNER'S request furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged or waived. If the CONTRACTOR fails to do so the OWNER may, after having notified the CONTRACTOR, either pay unpaid bills or withhold from the CONTRACTOR'S unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the CONTRACTOR shall be resumed in accordance with the terms of the CONTRACT DOCUMENTS but in no event shall the provisions of this Sentence be construed to impose any obligations upon the OWNER to either the CONTRACTOR, his Surety, or any third party. In paying any unpaid bills of the CONTRACTOR, any payment so made by the OWNER shall be considered as a payment made under the CONTRACT DOCUMENTS by the OWNER to the CONTRACTOR and the OWNER shall not be liable to the CONTRACTOR for any such payments made in good faith.

ARTICLE 85: CHANGE ORDERS

a. The Owner may, at any time, without notice of the sureties, by written order designated or indicated to be a Change Order, make any change in the work within the general scope of this Contract, including but not limited to changes:

1. In the Specifications (including drawings and designs);
2. In the method or manner of performance of the work;
3. In the Owner-furnished facilities, equipment, materials, services, or site; or
4. Directing acceleration in the performance of the work.

b. Any other written order or an oral order (which terms as used in this paragraph (b) shall include direction, instruction, interpretation or determination) from the Owner, which causes any such change, shall be treated as a change order under this clause, provided that the Contractor gives the Owner written notice stating the date, circumstances and source of the order and that the Contractor regards the order as a Change Order.

c. Except as herein provided, no order, statement, or conduct of the Owner shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment hereunder.

d. If any change, by change order, causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this Contract, an equitable adjustment shall be made and the Contract modified in writing accordingly: Provided, however, that no claim for any change order (b) above shall be allowed

for any costs incurred more than 20 days before the Contractor gives written notice as therein required: and, provided, further, that in case of defective specifications for which the Owner is responsible, the equitable adjustment shall include only increased cost reasonably incurred by the Contractor in attempting to comply with such defective specifications.

e. If the Contractor intends to assert a claim for an equitable adjustment under this clause, he must, within 30 days after receipt of a written change order under (a) above or the furnishing of a written notice under (b) above, submit to the Owner a written statement setting forth the general nature and monetary extent of such claim, unless this period is extended by the Owner. The statement of claim hereunder may be included in the notice under (b) above.

f. No claim by the Contractor for an equitable adjustment hereunder for any amount shall be allowed unless agreed to by Change Order prior to the work being done.

ARTICLE 86: CHANGES IN THE WORK

No changes in the work covered by the approved Contract Documents shall be made without having prior written approval of the Owner. Charges or credits for the work covered by the approved changes shall be determined by one or more, or a combination of the following methods as the Owner shall direct:

- a. Unit price bid previously approved;
- b. The actual cost of: labor, materials, ownership or rental costs of construction plant and equipment during the use of item on the extra work; power and consumable supplies for the operation of power and equipment;
- c. Insurance;
- d. Social Security, Old Age, and Unemployment contributions.

To the cost of "b" above, there shall be added a fixed fee to be agreed upon but not to exceed 15%. The fee shall be compensation to cover the cost of supervision, overhead, bonds, profit, and any other general expenses.

If a subcontractor performs the work, he shall be entitled to a maximum of 15% as a fixed fee, and the general Contractor be entitled to a maximum of 5% (of the cost of the subcontract work excluding subcontractor fixed fee) as a fixed fee.

ARTICLE 87: CLAIMS FOR EXTRA COST

No claims for extra work or cost will be allowed unless the same were done in pursuance of a written order of the Owner as aforesaid, and the claim presented with the first estimate after the changed or extra work is done. When the work is performed under terms specified elsewhere in the

Contract, the Contractor shall furnish satisfactory bills, payrolls, and vouchers covering all items of cost and upon the Owner's request, give him full access to the accounts relating thereto.

ARTICLE 88: CHANGES AND MODIFICATIONS

The Owner reserves the right to delete or cancel any item or items or parts thereof as listed in the bid, without recourse by the Contractor. The Owner also reserves the right to add to any item as listed in the bid. The compensation to be paid to the Contractor for such additional extensions, appurtenances or items shall be made under the applicable items in the bid. If no applicable items are provided in the bid, the compensation to be paid the Contractor shall be set forth under the article entitled "Changes in the Work" as found herein.

ARTICLE 89: ACCEPTANCE OF THE FINAL PAYMENT CONSTITUTES RELEASE

The acceptance of the Final Payment by the Contractor shall be and shall operate as a release to the Owner for all claims and all liability to the Contractor for all things done or furnished in connection with this work and for every act or neglect of the Owner and others relating to or arising out of this work. No payment, however, final or otherwise, shall operate as a release of the Contractor or his Surety from any obligations under this Contract or the performance and payment bond.