TOWN OF CUMBERLAND, RHODE ISLAND

DIAMOND HILL TRAILHEAD FACILITY

TOWN OF CUMBERLAND
COUNTY OF PROVIDENCE
RHODE ISLAND

BID # 2020-1007-20

BETA Group, Inc.
Engineers & Landscape Architects
701 George Washington Highway
Lincoln, RI 02865
(401) 333-2382

SEPTEMBER 2020

INVITATION TO BID
TOWN OF CUMBERLAND, RHODE ISLAND

BID # 2020-1007-20

Notice is hereby given that the
Will be accepted bids for the construction of

DIAMOND HILL PARK TRAIL HEAD FACILITY

The Town of Cumberland will accept sealed bids for **"DIAMOND HILL PARK TRAIL HEAD FACILITY"** at the office of the Finance Director, Town Hall, 45 Broad Street, Cumberland, Rhode Island, 02864, no later than **11:00 AM on October 7, 2020**, at which time bids will be opened and read aloud publicly in the Town Council Chambers.

Bidding Documents and Contract Specifications will be posted on the Town website at www.cumberlandri.org, and the RI State Purchasing website at www.purchasing.ri.gov.

A non-mandatory **Pre-Bid Conference** will be held on **Tuesday, September 22 2020 at 11:00 AM** at Diamond Hill Park, 4097 Diamond Hill Park. Participants will be asked to sign in and provide a work email address for the establishment of a Zoom bid opening meeting.

Requests for Further Information will be due by **Friday, September 25 2020 by 5:00 PM.** Requests for information or clarification must be made electronically to the attention of Linda Teel, Chief of Staff, lteel@cumberlandri.org.

Attention of the bidders is particularly called to the requirements as to conditions of employment to be observed and minimum wage rates to be paid under the Contract. In Conformity with the provisions of Chapter 13 of Title 37, General Laws, Rhode Island, 1956, as amended, the minimum wages for a day's work paid to craftsmen, teamsters and laborers shall be not less than the customary and prevailing rate of wages for a day's work in the locality where the work undertaken. Such a schedule of wages has been established on a minimum hourly basis and is on file in the office of the State Department of Labor.

The contract will be awarded to the lowest, qualified, responsible bidder. The Town of Cumberland reserves the right to accept or reject, without prejudice, all bids to waive any irregularities therein, or to accept the proposal deemed to be in the best interest of the Town of Cumberland. The Town of Cumberland does not discriminate based on age, race, religion, national origin, color, or disability in accordance with applicable laws and regulations.

Bids must be submitted in sealed envelopes with the above noted proper title endorsed thereon, and addressed and delivered to the Town Finance Director, Town of Cumberland at the above-referenced address. The bid submittal shall consist of the original bid proposal and three (3) copies of the bid. The bid shall be accompanied by a bid deposit in the amount of five percent (5%) of the bid amount, in the form of cash; certified check; treasurer's check; cashier's check; or a bid bond in a form satisfactory to the Town of Cumberland.

Please e-mail an electronic copy of the bid to the Finance Director at rchauvin@cumberlandri.org within 24 hours after the bid opening."

All bids are due by 11:00 AM on October 7, 2020 at which time bids will be opened and read aloud publicly via Zoom meeting. After the mandatory pre-bid meeting, the Town will establish a Zoom meeting for the bid opening and the link will be sent to all who attended the pre-bid meeting. Anyone can request to attend the Zoom Bid Opening meeting by contacting Linda Teel at lteel@cumberlandri.org.

Questions regarding this bid shall be directed to Linda Teel, Chief of Staff, at 401-724-2400, Ext. 134.

TOWN OF CUMBERLAND

DIAMOND HILL PARK TRAIL HEAD FACILITY
BID PROPOSAL

(Bid No. 2020-1007-20

1.0 PROPOSAL STATEMENT:

The undersigned bidder has carefully examined the site of the project described herein; has become familiar with local conditions and the character and extent of the work, has carefully examined the drawings, and contract documents, and understands the requirements stipulated herein.

The undersigned bidder has determined the quality and quantity of equipment and materials required; has investigated the location and determined the sources of supply of the materials required; has investigated labor conditions; and has arranged for the continuous prosecution of the work herein described.

The undersigned bidder hereby agrees to be bound by the award of the contract, and, if awarded the contract on this proposal, to execute within ten (10) days after notice of award the required Contract Agreement and the required Contract Bond, of which contract this proposal, the drawings for the work, and the specifications as above indicated shall be a part. Contract work shall commence as specified in the contract agreement.

The undersigned bidder further agrees to provide all necessary equipment, tools, labor, incidentals, and other means of construction to do all the work and furnish all the materials, of the specified requirements which are necessary to complete the work in accordance with the proposal, the drawings, and the specifications, and agrees to accept therefore, as payment in full, the unit prices for the various items described in the specifications as set forth in this proposal.

The bidder understands that the estimated quantities of work shown herein are approximate only and are subject to increase or decrease and agrees that all quantities of work, whether increased or decreased, are to be performed at the unit prices stated in the following estimate of quantities and schedule of prices for the work described.

The undersigned bidder declares that this proposal is made without connection with any other person or persons making proposals for the same work and is therefore in all respects fair and without collusion of fraud.

Bidder acknowledges report of the following addenda issued for this contract: Addendum No(s)_____

2.0 PROPOSAL BID SCHEDULE

Note: All prices in both words and figures must be completely filled in using ink.

Item No.	Brief Item Description
1.	All Site Work as Shown on the Plans and Outlined in the Specifications Total Bid (in figures) $_____ Total Bid (in words) _____
2.	All Building Related Work as Shown on the Plans and Outlined in the Specifications Total Bid (in figures) $_____ Total Bid (in words) _____

3.0 PROPOSAL SUMMARY:

The undersigned bidder submits herewith Proposal Guaranty in the form of a bid bond in favor of the Town of Cumberland, Rhode Island, or cash, in the amount of

_____, and agrees and consents that the Proposal Guaranty shall be forfeited to the Town as liquidated damages if the required Contract Bond are not executed within ten (10) days from the date of the notice of award.

The undersigned bidder further agrees if awarded the Contract based upon this proposal, to begin work as stipulated in the Contract Agreement, and further agrees to complete the work under the provisions of this contract within 240 consecutive calendar days from the date of execution of the Contract Agreement, except as otherwise provided therein.

For informal comparison of bids only, the total or gross sum bid is:

$_____
(Figures)

$_____
(Written)
_____Dollars

Date: _____ Bidder: _____

By: _____

Title: _____

Address: _____

Being a ( ) Corporation
incorporated under the Laws of the State of _____
( ) Partner
( ) Individual

composed of officers, partners, or owner as follows:

SEAL:

_____
President

_____
Vice President

_____
Secretary

_____
Treasurer

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that _____
(Name of Contractor)

of _____
(Address of Contractor)

as Principal and _____as Surety, are

hereby held and firmly bound unto _____ as owner in the

penal sum of _____ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators,

successors and assigns. Signed, this _____ day of _____, 20____.

The Condition of the above obligation is such that whereas the Principal has submitted

to _____ a certain bid, attached hereto and hereby

made a part to enter into a contract in writing, for the _____

NOW, THEREFORE,

(a) If said Bid shall be rejected, or in the alternate,
(b) If said Bid shall be accepted and the Principal Contract attached hereto (properly completed in accordance with said Bid) and shall furnish a bond for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid,

then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

_____(L.S.)
Principal

_____
Surety

By: _____

IMPORTANT – Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

CERTIFICATE OF CORPORATE ACKNOWLEDGEMENT

State of _____

County of _____

On this _____ day of _____, 20____,

before me personally came _____

who resides at _____

and is the _____, of the corporation described in and which executed the foregoing instrument; that he/she knows the corporation seal of said corporation; the seal affixed to the foregoing instrument is such corporation seal and it was so affixed by order of the Board of Directors of said corporation, and by the like order he/she signed thereto his/her name and official designation.

_____
Notary Public (Seal)

My commission expires: _____

REFERENCES

The bidder is required to state below that work of a similar character to that included in the proposed contract he has done and give references which will enable the Town of Cumberland to make inquiries and judge as to his experience, skill, available financial resources, credit and business standing.

Reference Name _____

Company Name/ Organization _____

Telephone Number(s) _____

Type of Work Performed _____

Additional Information _____

_____

Reference Name _____

Company Name/ Organization _____

Telephone Number(s) _____

Type of Work Performed _____

Additional Information _____

_____

Reference Name _____

Company Name/ Organization _____

Telephone Number(s) _____

Type of Work Performed _____

Additional Information _____

_____

Reference Name _____

Company Name/ Organization _____

Telephone Number(s) _____

Type of Work Performed _____

Additional Information _____

_____

If necessary, provide attachments of additional REFERENCES.

ANTI-COLLUSION CERTIFICATE FOR CONTRACT AND FORCE ACCOUNT
[Sworn Affidavit]

Title 23, United States Code, Section 112(c), requires as a condition precedent to approval by the Director of Public Roads of the contract for this work, that there be filed a sworn statement executed by, on behalf of, the person, firm, association, or corporation to whom such contract is to be awarded, certifying that such person, firm, association, or corporation has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with such contract. This sworn statement shall be in the form of an affidavit executed and sworn to by the successful bidder before a person who is authorized by the Laws of this State to administer oaths.

The person, firm association, or corporation submitting the bid [under 23 U.S.C. 112 (c)] has the option to sign either:

(a) the sworn affidavit executed and sworn to by the bidder before a person who is authorized by the State to administer oaths; or

(b) the unsworn declaration executed under penalty of perjury under the laws of the United States [as allowed by 28 U.S.C. 1746].

A bidder will not be considered for award of contract under this invitation for bids unless such bidder completes either the unsworn declaration (as stated on the following page) or the sworn affidavit as prescribed below:

PLEASE NOTE: CONTRACTOR TO COMPLETE ONLY ONE (1) CERTIFICATION STATEMENT. DO NOT SIGN BOTH STATEMENTS.

To the
State of_____

County of_____

I, _____(name of party signing affidavit) _____

(title), being duly sworn, do dispose and say: On behalf of _____(name of Contractor), of_____said Contractor has not, either directly of indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this proposal.

Contractor:_____

Signature:_____

Sworn to me this _____day of_____,2020. My commission expires _____

_____
Signature and Seal of Notary Public

NONCOLLUSION OF PRIME CONTRACTOR

State of _____

County of _____

_____ , says that

1. He is_ _____ of _____
   The Bidder that has submitted the attached Bid:

2. He is fully informed respecting the preparation and content of the attached Bid and all pertinent circumstances respecting such Bid:

3. Such Bid is genuine and is not a collusive or sham Bid:

4. Neither the said bidder nor any of its officers, partners, owners, agents representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly, with any other bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other bidder, firm or person to fix the price or prices in the attached Bid or of any other bidder, or to fix any overhead, profit or cost element of the Bid price of any other bidder, or to secure through collusion, conspiracy ,connivance or unlawful agreement any advantage against the Owner or any person interested in the proposal Contract:

5. The price or prices quoted in the attached Bid are fair proper and are not tainted by any collusion, conspiracy connivance or unlawful agreement on the part of the bidder or any of its agents, representatives, owners employees, or parties in interest including this affiant.

State of _____

County of _____

On this _____ day of _____, 20____,

before me personally came _____

and is the _____, of the corporation described in and which executed the foregoing instrument; that he/she knows the corporation seal of said corporation; the seal affixed to the foregoing instrument is such corporation seal and it was so affixed by order of the Board of Directors of said corporation, and by the like order he/she signed thereto his/her name and official designation.

_____
Notary Public (Seal)

My commission expires: _____

CERTIFICATE OF COMPLIANCE

State/Commonwealth of _____

County of _____

_____ being first duly sworn, deposes and says that:

1. He (she) is the _____ (owner, partner, officer, representative of agent) of _____, the bidder that has submitted the attached bid.

2. He (she) is fully informed respecting the preparation and contents of the attached bid and all pertinent circumstances respecting such bid.

3. The business entity that has submitted this bid will, in performing this contract, be in full compliance with all Town of Cumberland and State of Rhode Island ordinances or regulations.

Signed: _____

Title: _____

Date: _____

State of_____

County of_____

In _____ on the _____ day of ____, personally appeared before me

_____ known to me and known by me to be the party executing the foregoing instrument and he/she acknowledged that such execution by him/her was his/her free act and deed and the free act and deed of the company in his/her capacity aforesaid.

Signed: _____
(Notary Public)

My commission expires: _____

CONTRACT AGREEMENT

THIS AGREEMENT, made this the _____day of _____, 20_____, by and between (1) The Town of Cumberland acting herein through its (2) Mayor herein called "Owner" and (3) _____ doing business as *(an individual) (a partnership) (a corporation) located in the City of _____, County of _____, and State of _____, hereinafter called "Contractor."

WITNESSETH: that for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the Owner, the Contractor hereby agrees with the Owner to commence and complete the construction described as follows:

DIAMOND HILL PARK TRAIL HEAD FACILITY

Hereinafter called the project, the sum of _____Dollars ($ _____) and all extra work in connection therewith, under the terms as stated in the general and Supplemental conditions of the contract; and at his (its or their) own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the Proposal, the General Conditions, supplemental General Conditions, Technical Specifications, and other Special conditions of the contract, the plans, which include all maps, plats, blue prints, and other drawings and printed or written explanatory matter thereof the specifications and contract documents included in the Invitation to Bid as prepared by the Town Engineer, herein entitled the Engineer, all of which are made a part hereof and collectively evidence and constitute the contract.

The Contractor hereby agrees to commence work under this contract on or before a date to be specified in written "Notice to Proceed" of the Owner and to fully complete the project within 240 consecutive calendar days thereafter. The Contractor further agrees to pay, as liquidated damages, the sum of $1000.00 for each consecutive calendar day thereafter as hereinafter provided in the General Conditions.

The Owner agrees to pay the Contractor in current funds for the performance of the contract, subject to additions and deductions, as provided in the General Conditions of the contract, and to make payments on account thereof as provided in the General Conditions.

IN WITNESS WHEREOF, the parties to these presents have executed this contract in three (3) counterparts, each of which shall be deemed as original, in the year and day first mentioned above.

(Seal)
ATTEST: _____ (Owner) _____ (Witness)
By_____ (Name) _____ (Title)

(Seal)
ATTEST: _____ (Contractor) _____ (Witness)
By_____ (Name) _____ (Title)

_____ (Address)

_____

*IMPORTANT: Strike out any inapplicable terms. Secretary of the Owner should attest. If Contractor is corporation, Secretary should attest. Give proper title of each person-executing contract.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that _____
(Name of Contractor)
of _____
(Address of Contractor)
as Principal hereinafter called Principal, and _____
(Name of Surety)
of _____
(Address of Surety)
a Corporation, organized and existing under the laws of the State of _____ hereinafter called Surety, are held and firmly bound unto the Town of Cumberland called the Obligee, in the full penal sum of _____ ($ _____),
In lawful money of their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT WHEREAS said Principal has entered into a certain written contract with said Obligee, dated the _____ day of _____, 20__ for the **DIAMOND HILL PARK TRAIL HEAD FACILITY** which contract, together with all Contract Documents now made or which may hereafter be made in extension, modification or alteration thereof, are hereby referred to, incorporated in and made a part of this bond as though herein fully set forth.

NOW, THEREFORE, if the said Principal shall well and truly keep, perform and execute all the terms, conditions and stipulations of said contract according to its provisions on his or its part to be kept and performed and shall indemnify and reimburse the obligee for any loss that it may suffer through failure of the principal to faithfully observe and perform each and every obligation and duty imposed upon the Principal by the said contract, at the time and in the manner therein specified, then this obligation shall be null and void, otherwise it shall remain and be in full force and effect.

PROVIDED, HOWEVER, that any alterations which may be made in the terms of said contract or in the work done or to be done under it, or the giving by the Obligee of any extension of time for the performance of said Contract or any other forbearance on the part of either the Obligee or the Principal one to the others, shall not in any way released the Principal and/or the Surety, or either of them, their representatives, heirs, executors, administrators, successors or assigns from liability hereunder, notice to the Surety or Sureties of any such alteration, extension or forbearance being hereby specifically and absolutely waived.

AND PROVIDED FURTHER THAT NO ACTION, suit or proceeding shall be had or maintained against the Surety on this instrument unless the same be brought or instituted and process served upon the Surety within three years from the expiration of the guaranty period provided in the Contract, whether the work be completed by the Principal, or Obligee.

IN WITNESS WHEREOF, said principal and surety have signed and sealed this instrument this the _____ day of _____, 20____.

ATTEST: _____ (Principal)	ATTEST: _____ (Surety)
_____ (Principal) Secretary	_____ (Surety) Secretary
By _____ (Witness as to Principal)	By _____ (Witness as to Surety)

NOTE: Date of Bond must not be prior to date of Contract. If Contractor is Partnership, all partners should execute bond.

IMPORTANT: Surety companies executing Bond must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Rhode Island.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, that _____
(Name of Contractor)
of _____
(Address of Contractor)
as Principal hereinafter called Principal, and _____
(Name of Surety)
of _____
(Address of Surety)
a Corporation, organized and existing under the laws of the State of _____hereinafter called Surety, are held and firmly bound unto the Town of Cumberland called the Obligee, in the full penal sum of _____ ($ _____), In lawful money of their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT WHEREAS said Principal has entered into a certain written contract with said Obligee, dated the _____ day of _____, 20__ which written contract provides for the **DIAMOND HILL PARK TRAIL HEAD FACILITY** which contract, together with all plans and specifications now made or which may hereafter be made in extension, modification or alteration thereof, are hereby referred to, incorporated in and made a part of this bond as though herein fully set forth.

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil gasoline, coal and coke, repairs or machinery, equipment and tools, consumed or used in connection with the construction of such work, and all insurance premiums on said work and for all labor, performed in such work whether by subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed, pursuant to the provision of the General Statutes of the State of Rhode Island and the rights and liabilities hereunder shall be determined and limited by said sections to the same extent as if they were copies at length herein.

PROVIDED FURTHER that the said Surety for value received hereby stipulates and agrees that no change, extension of time alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

PROVIDED FURTHER that no final settlement between the Obligee and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, said principal and surety have signed and sealed this instrument this _____ day of _____, 20____.

ATTEST: _____ (Principal)	ATTEST: _____ (Surety)
_____ (Principal) Secretary	_____ (Surety) Secretary
By _____ (Witness as to Principal)	By _____ (Witness as to Surety)

NOTE: Date of Bond must not be prior to date of Contract. If Contractor is Partnership, all partners should execute bond.

IMPORTANT: Surety companies executing Bond must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Rhode Island.

TOWN OF CUMBERLAND, RI

NOTICE OF AWARD

TO:

PROJECT DESCRIPTION: **DIAMOND HILL PARK TRAIL HEAD FACILITY**

The OWNER has considered the BID submitted by you for the above referenced WORK in response to its Invitation for Bids dated _____, 2020 and Information for Bidders.

You are hereby notified that your BID has been accepted for items in the amounts shown in the Bid Schedule.

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S PERFORMANCE BOND, PAYMENT BOND and certificates of insurance within ten (10) calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said BONDS within ten (10) days from the date of this NOTICE, said OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your BID as abandoned and as a forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

This the ___day of_____, 2020.

TOWN OF CUMBERLAND, RHODE ISLAND
OWNER

BY: _____
(Owner Name)

TITLE _____

ACCEPTANCE OF NOTICE

Receipt of the NOTICE OF AWARD is hereby acknowledged

BY: _____

This the _____ day of _____, 20____.

BY: _____

TITLE: _____

TOWN OF CUMBERLAND, RI

NOTICE TO PROCEED

TO:

PROJECT DESCRIPTION: **DIAMOND HILL PARK TRAIL HEAD FACILITY**

You are hereby notified to commence WORK in accordance with the agreement dated

_____, on or before _____, and you are to complete the WORK within **Two Hundred Forty (240) consecutive calendar days or as directed by the Engineer/Town thereafter**. The date of completion of all WORK is

therefore _____.

TOWN OF CUMBERLAND, RHODE ISLAND
OWNER

BY: _____
(Owner Name)

TITLE: _____

ACCEPTANCE OF NOTICE

Receipt of the NOTICE TO PROCEED is hereby acknowledged

BY: _____

This the _____ day of _____, 20____.

BY: _____

TITLE: _____

TOWN OF CUMBERLAND, RI

CHANGE ORDER

Order No.: _____
Date: _____
Agreement Date: _____

NAME OF PROJECT: **DIAMOND HILL PARK TRAIL HEAD FACILITY**

OWNER: TOWN OF CUMBERLAND, RHODE ISLAND

The following changes are hereby made to the CONTRACT DOCUMENTS:

Justification:

Change to CONTRACT PRICE: $_____

Original CONTRACT PRICE: $_____

Current CONTRACT PRICE adjusted by previous CHANGE ORDER $_____

The CONTRACT PRICE due to this CHANGE ORDER will be (increased)(decreased) by: $ _____

The new CONTRACT PRICE including this CHANGE ORDER will be $_____

Change to CONTRACT TIME:

The CONTRACT TIME:

The CONTRACT TIME will be (increased) (decreased) by _____ calendar days.

The date for completion of all work will be _____
(Date)

Approvals required:

Requested by: _____

Recommended by: _____

Ordered by: _____

Accepted by: _____

SECTION 00700
GENERAL CONDITIONS

1.0 DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

ADDENDA – Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the bidding documents or the Contract Documents.

AGREEMENT – The written agreement between the Owner and the Contractor covering the work to be performed; other Contract Documents are attached to the Agreement and made part thereof as provided therein.

APPLICATION FOR PAYMENT – The form accepted by the Engineer which is to be used by the Contractor in requesting progress or final payments and which is to include such supporting documentation as is required by the Contract Documents.

BID – The Offer or proposal of the bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

BONDS – Bid, performance and payment bonds and other instruments of security.

CHANGE ORDER – A document recommended by the Engineer who is signed by the Contractor and the Owner and authorizes an addition, deletion or revision in the work, or an adjustment in the Contract Price or the Contract Time; issued on or after the Effective Date of the Agreement.

CONTRACT DOCUMENTS – The Agreement, Addenda (which pertain to the Contract Documents), the Contractor's Bid (including documentation accompanying the Bid and any post-Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all amendments, modifications and supplements issued pursuant to paragraphs 3.4 and 3.5 on or after the Effective Date of the Agreement.

CONTRACT PRICE – The moneys payable by the Owner to the Contractor under the Contract Documents as stated in the Agreement (subject to the Provisions of paragraph 11.9.1 in the case of Unit Price Work).

CONTRACT TIME – The number of days (computed as provided in paragraph 17.2) or the date stated in the Agreement for the completion of the work.

CONTRACTOR – The person, firm or corporation with whom the Owner has entered into the Agreement.

DEFECTIVE – An adjective which when modifying the work Work refers to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to the Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by the Owner at Substantial Completion in accordance with paragraph 14.8 or 14.10).

DRAWINGS – The drawings which show the character and scope of the Work to be performed and which have been prepared or approved by the Engineer and are referred to in the Contract Documents.

EFFECTIVE DATE OF THE AGREEMENT – The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

ENGINEER – for the purpose of this contract is the Cumberland Town Engineer.

FIELD ORDER – A written order issued by the Engineer which orders minor changes in the Work in accordance with paragraph 9.5 but which does not involve a change in the Contract Price of the Contract time.

GENERAL REQUIREMENTS – Sections of Division 1 of the Specifications.

LAWS AND REGULATIONS; LAWS OR REGULATIONS – Laws, rules, regulations, ordinances, codes and/or orders.

NOTICE OF AWARD – The written notice by the Owner to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the conditions precedent enumerated therein, within the time specified, the Owner will sign and deliver the Agreement.

NOTICE TO PROCEED – A written notice given by the Owner to the Contractor (with a copy to the Engineer) fixing the date on which the Contract time will commence to run and on which the Contractor shall start to perform the Contractor's obligations under the Contract Documents.

OWNER – The public body or authority, corporation, association, firm or person with whom the Contractor has entered into the Agreement and for whom the work is to be provided.

PARTIAL UTILIZAITON – Placing a portion of the Work in service for the purpose for which it is intended (or related purpose) before reaching Substantial Completion for all Work.

PROJECT – The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

RESIDENT PROJECT REPRESENTATIVE – The authorized representative of the Owner who is assigned to the site or any part thereof.

SHOP DRAWINGS – All drawing, diagrams, illustrations, schedules and other data which are specifically prepared by or for the Contractor to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a Supplier and submitted by the Contractor to illustrate material or equipment for some portion of the Work.

SPECIFICATIONS – Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the work and certain administrative details applicable thereto.

SUBCONTRACTOR – An individual, firm or corporation having direct contract with the Contractor or with any other Subcontractor for the performance of a part of the Work at the site.

SUBSTANTIAL COMPLETION – The work (or a specific part thereof) has progressed to the point where, in the opinion of the Engineer as evidenced by the Engineer's definitive certificate of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it is intended; or if there be no such certificate issued, when final payment is due in accordance with paragraph 14.13. The terms "substantially complete" and "substantially completed" as applied to any Work refer to Substantial Completion thereof.

SUPPLEMENTARY CONDITIONS – The part of the Contract Documents, which amends or supplements these General Conditions.

SUPPLIER – A manufacturer, fabricator, supplier, distributor, material man or vendor.

UNDERGROUND FACILITIES – All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

UNIT PRICE WORK – Work to be paid for on the basis of unit prices.

WORK – The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the Contract Documents.

WORK DIRECTIVE CHANGE – A written directive to the Contractor, issued on or after the Effective Date of the Agreement and signed by the Owner and recommended by the Engineer, ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed as provided in paragraph 4.2 or 4.3 or to emergencies under paragraph 6.22. A work Directive change may not change the Contract Price or the Contract Time, but is evidence that the parties expect that the change directed or documented by a Work Directive Change will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Time as provided in paragraph 10.2.

WRITTEN AMENDMENT – A written amendment of the Contract Documents, signed by the Owner and the Contractor on or after the Effective Date of the Agreement and normally dealing with the non-engineering or non-technical rather than strictly Work-related aspects of the Contract Documents.

2.0 PRELIMINARY MATTERS

DELIVERY OF BONDS:

2.1 When the Contractor delivers the executed Agreements to the Owner, the Contractor shall also deliver to the Owner such Bonds as the Contractor may be required to furnish in accordance with paragraph 5.1.

COPIES OF DOCUMENTS:

2.2 The Owner shall furnish to the Contractor up to five copies (unless otherwise specified in the Supplementary Conditions) of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

COMMENCEMENT OF CONTRACT TIME; NOTICE TO PROCEED:

2.3 The Contract Time will commence to run on the thirtieth day after the Effective Date of the Agreement, or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within thirty days after the Effective date of the Agreement. In no event will the Contract time commence to run

later than the seventy-fifth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

STARTING THE PROJECT:

2.4 The Contractor shall start to perform the Work on the date when the Contract Time commences to run, but no Work shall be done at the site prior to the date on which the Contract Time commences to run.

BEFORE STARTING CONSTRUCTION:

2.5 Before undertaking each part of the Work, the Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements, the Contractor shall promptly report in writing to the Engineer any conflict, error or discrepancy which the Contractor may discover and shall obtain a written interpretation or clarification from the Engineer before proceeding with any Work affected thereby; however, the Contractor shall not be liable to the Owner or the Engineer for failure to report any conflict, error or discrepancy in the Contract Documents, unless the Contractor had actual knowledge thereof or should reasonable have known thereof.

2.6 Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), the Contractor shall submit to the Engineer for review:

2.6.1 an estimated progress schedule indicating the starting and completion dates of the various stages of the work;

2.6.2 a preliminary schedule of Shop Drawing submissions; and

2.6.3 a preliminary schedule of values for all of the Work which will include quantities and prices of items aggregating the Contract Price and will sub-divide the work into component parts in sufficient detail to serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work, which will be confirmed in writing by the Contractor at the time of submission.

2.7 Before any Work at the site is started, the Contractor shall deliver to the Owner, with a copy to the Engineer, certificates (and other evidence of insurance requested by the Owner) which the Contractor is required to purchase and maintain in accordance with paragraphs 5.3 and 5.4, and the Owner shall deliver to the Contractor certificates (and other evidence of insurance requested by the Contractor) which the Owner is required to purchase and maintain in accordance with paragraphs 5.6 and 5.7.

PRECONSTRUCTION CONFERENCE:

2.8 Within twenty days after the Effective Date of the Agreement, but before the Contractor starts the Work at the site, a conference attended by the Contractor, the Engineer and others as appropriate will be held to discuss the schedules referred to in paragraph 2.6, to discuss procedures for handling Shop Drawings and other submittals and for processing Applications for Payment, and to establish a working understanding among the parties as to the Work.

FINALIZING SCHEDULES:

2.9 At least ten days before submission of the first Application for Payment a conference attended by the Contractor, the Engineer and others as appropriate will be held to finalize the

schedule submitted in accordance with paragraph 2.6. The finalized progress schedule will be acceptable to the Engineer as providing an orderly progression of the Work to completion within the Contract Time, but such acceptance will neither impose on the Engineer responsibility for the progress or scheduling of the Work nor relieve the Contractor from full responsibility therefore. The finalized schedule of Shop Drawings submissions will be acceptable to the Engineer as providing a workable arrangement for processing the submissions. The finalized schedule of values will be acceptable to the Engineer as to form and substance.

3.0 CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

INTENT:

3.1 The Contract Documents comprise the entire agreement between the Owner and the Contractor concerning the Work. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the law of the place of the Project.

3.2 It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result will be supplied whether or not specifically called for, When words which have a well known technical or trade meaning are used to describe Work, materials or equipment such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the Laws or Regulations of any government authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or Laws or Regulations in effect at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of the Owner, the Contractor or the Engineer, or any of their consultants, agents or employees from those set forth in the Contract Documents, nor shall it be effective to assign to the Engineer, or any of the Engineer's consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.15 or 9.16. Clarifications and interpretations of the Contract Documents shall be issued by the Engineer as provided in paragraph 9.4.

3.3 If, during the performance of the Work, the Contractor finds a conflict, error or discrepancy in the Contract Documents, the Contractor shall so report to the Engineer in writing at once and before proceeding with the Work affected thereby shall obtain a written interpretation or clarification from the Engineer; however, the Contractor shall not be liable to the Owner or the Engineer for failure to report any conflict, error or discrepancy in the Contract Documents unless the Contractor had actual knowledge thereof or should reasonably have known thereof.

AMENDING AND SUPPLEMENTING CONTRACT DOCUMENTS:

3.4 The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:

3.4.1 a formal Written Amendment,

3.4.2 a Change Order (pursuant to paragraph 10.4), or

3.4.3 a Work Directive change (pursuant to paragraph 10.1).

As indicated in paragraphs 11.2 and 12.1, Contract Price and Contract Time may only be changed by a Change Order or a Written Amendment.

3.5 In addition, the requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, in one or more of the following ways:

3.5.1 a Field Order (pursuant to paragraph 9.5),

3.5.2 the Engineer's approval of a Shop Drawing or sample (pursuant to paragraphs 6.26 and 6.27), or

3.5.3 the Engineer's written interpretation or clarification (pursuant to paragraph 9.4).

REUSE OF DOCUMENTS:

3.6 Neither the Contractor nor any Subcontractor or Supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with the Owner shall have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of the Engineer; and they shall not reuse any of them on extensions of the Project or any other project without written consent of the Owner and the Engineer and specific written verification or adaptation by the Engineer.

4.0 AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS

AVAILABILITY OF LANDS:

4.1 The Owner shall furnish, as indicated in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of the Contractor. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by the Owner, unless otherwise provided in the Contract Documents. If the Contractor believes that any delay in the Owner's furnishing these lands, rights-of-way or easements entitles the Contractor to an extension of the Contract Time, the Contractor may make a claim therefore as provided in Article 12. The Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

PHYSICAL CONDITIONS:

4.2.1 Explorations and Reports: Reference is made to the Supplementary Conditions for identification of those reports of explorations and tests of sub-surface conditions at the site that have been utilized by the Engineer in preparation of the Contract Documents. The Contractor may rely upon the accuracy of the technical data contained in such reports, but not upon non-technical data, interpretations or opinions contained therein or for the completeness thereof for the Contractor's purposes. Except as indicated in the immediately preceding sentence and in paragraph 4.2.6, the Contractor shall have full responsibility with respect to subsurface conditions at the site.

4.2.2 Existing Structures: Reference is made to the Supplementary Conditions for identification of those drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Facilities referred to in paragraph 4.3) which are at or contiguous to the site that have been utilized by the Engineer in preparation of the Contract Documents. The Contractor may rely upon the accuracy of the technical data contained in such drawings, but not for the completeness thereof for the Contractors purposes. Except as indicated in the immediately preceding sentence and in paragraph 4.2.6, the Contractor shall have full responsibility with respect to physical conditions in or relating to such structures.

4.2.3 Report of Differing Conditions: If the Contractor believes that:

4.2.3.1 any technical data on which the Contractor is entitled to rely as provided in paragraphs 4.2.1 and 4.2.2 is inaccurate, or

4.2.3.2 any physical condition uncovered or revealed at the site differs materially from that indicated, reflected, or referred to in the Contract Documents,

the Contractor shall, promptly after becoming aware thereof and before performing any Work in connection therewith (except in an emergency as permitted by paragraph 6.22), notify the Owner and the Engineer in writing about the inaccuracy or difference.

4.2.4 Engineer's Review: The Engineer will promptly review the pertinent conditions, determine the necessity of obtaining additional explorations or tests with respect thereto and advise the Owner in writing (with a copy to the Contractor) of the Engineer's findings and conclusions.

4.2.5 Possible Document Change: If the Engineer concludes that there is a material error in the Contract Documents or that because of newly discovered conditions a change in the Contract Documents is required, a Work Directive Change or a Change Order will be issued as provided in Article 10 to reflect the document the consequences of the inaccuracy or difference.

4.2.6 Possible Price and Time Adjustments: In each such case, an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, or any combination thereof, will be allowable to the extent that they are attributable to any such inaccuracy or difference. If the Owner and the Contractor are unable to agree as to the amount or length thereof, a claim may be made therefor as provided in Articles 11 and 12.

PHYSICAL CONDITIONS – UNDERGROUND FACILITIES:

4.3.1 Shown or Indicated: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is based on information and data furnished to the Owner or the Engineer by the owners of such Underground Facilities or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

4.3.1.1 The Owner and the Engineer shall not be responsible for the accuracy or completeness of any such information or data; and,

4.3.1.2 The Contractor shall have full responsibility for reviewing and checking all such information and data, for locating all Underground Facilities shown or indicated in the Contract Documents, for

coordination of the Work with the owners of such Underground Facilities during construction, for the safety and protection thereof as provided in paragraph 6.20 and repairing any damage thereto resulting from the Work, the cost of all of which will be considered as having been included in the Contract Price.

4.3.2 Not Shown or Indicated: If an Underground Facility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract Documents and which the Contractor could not reasonably have been expected to be aware of, the Contractor shall, promptly after becoming aware thereof and before performing any Work affected thereby (except in an emergency as permitted by paragraph 6.22), identify the owner of such Underground Facility and give written notice thereof to that owner and to the Owner and the Engineer. The Engineer will promptly review the underground Facility to determine the extent to which the Contract Documents should be modified to reflect and document the consequences of the existence of the Underground Facility, and the Contract Documents will be amended or supplemented to the extent necessary. During such time, the Contractor shall be responsible for the safety and protection of such Underground Facility as provided in paragraph 6.20. The Contractor shall be allowed an increase in the Contract Price or an extension of the Contract time, or both, to the extension that they are attributable to the existence of any Underground Facility that was not shown or indicated in the Contract Documents and which the Contractor could not reasonably have been expected to be aware of. If the parties are unable to agree as to the amount or length thereof, the Contractor may make a claim therefore as provided in Articles 11 and 12.

REFERENCE POINTS:

4.4 The Owner shall provide suitable surveys to establish reference points for construction, which in the Engineer's judgment are necessary to enable the Contractor to proceed with the Work. The Contractor shall be responsible for laying out the Work (unless otherwise specified in the General Requirements), shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of the Owner. The Contractor shall report to the Engineer whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations and shall be responsible for the accurate replacement or relocation of such reference points by professionally qualified personnel.

5.0 BONDS AND INSURANCE

PERFORMANCE AND OTHER BONDS:

5.1 The Contractor shall furnish performance and payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as otherwise provided by Law or Regulation or by the Contract Documents. The Contractor shall also furnish such other Bonds as are required by the Supplementary Conditions. All Bonds shall be in the forms prescribed by Law or Regulation or by the Contract Documents and be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies' as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. A certified copy of the authority to act must accompany all Bonds signed by an agent.

5.2 If the surety on any Bond furnished by the Contractor is declared a bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 5.1, the Contractor shall within five days thereafter substitute another Bond and Surety, both of which must be acceptable to the Owner.

CONTRACTOR'S LIABILITY INSURANCE:

5.3 The Contractor shall purchase and maintain such comprehensive general liability result from the Contractor's performance and furnishing of the Work and the Contractor's other obligations under the Contract Documents, whether it is to be performed or furnished by the Contractor, by any Subcontractor, by anyone directly or indirectly employed by any of them to perform or furnish any of the Work, or by anyone for whose acts any of them may be liable:

5.3.1 Claims under worker or workmen's compensation, disability benefits and other similar employee benefit acts;

5.3.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;

5.3.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;

5.3.4 Claims for damages insured by personal injury liability coverage which are sustained (a) by any person as a result of an offense directly or indirectly related to the employment of such person by the Contractor, or (b) by any other person for any other reason;

5.3.5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom;

5.3.6 Claims arising out of operation of Laws or Regulations for damages because of bodily injury or death of any person or for damage to property; and

5.3.7 Claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

The insurance required by this paragraph 5.3 shall include the specific coverages and be written for not less than the limits of liability and coverages provided in the Supplementary Conditions, or required by law, whichever is greater. The comprehensive general liability insurance shall include complete operations insurance. All of the policies of insurance so required to be purchased and maintained (or the certificates or other evidence thereof) shall contain a provision or endorsement that the coverage afforded will not be cancelled, materially changed or renewal refused until at least thirty days' prior written notice has been given to the Owner and the Engineer by certified mail. All such insurance shall always remain in effect until final payment and thereafter when the Contractor may be correcting, removing or replacing defective work in accordance with paragraph 13.12. In addition, the Contractor shall maintain such completed operations insurance for at least two years after final payment and furnish the Owner with evidence of continuation of such insurance at final payment and one year thereafter.

CONTRACTUAL LIABILITY INSURANCE:

5.4 The comprehensive general liability insurance required by paragraph 5.3 would include contractual liability insurance applicable to the Contractor's obligations under paragraphs 6.30 and 6.31.

OWNER'S LIABILITY INSURANCE:

5.5 The Owner shall be responsible for purchasing and maintaining the Owner's own liability insurance and, at the Owner's option, may purchase and maintain such insurance as will protect the Owner against claims which may arise from operations under the Contract Documents.

PROPERTY INSURANCE:

5.6 Unless otherwise provided in the Supplementary Conditions, the Owner shall purchase and maintain property insurance upon the Work at the site to the full insurable value thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall include the interests of the Owner, the Contractor, Subcontractors, and the Engineer and Engineer's consultants in the Work, all of whom shall be listed as insured or additional insured parties, shall insure against the perils of fire and extended coverage and shall "all risk" insurance for physical loss and damage including theft, vandalism and malicious mischief, collapse and water damage, and such other perils as may be provided in the Supplementary Conditions, and shall include damages, losses and expenses arising out of resulting from any insured loss or incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers, architects, attorneys and other professionals). If not covered under the "all risk" insurance or otherwise provided in the Supplementary Conditions, the Contractor shall purchase and maintain similar property insurance on portions of the Work stored on and off the site or in transit when such portions of the Work are to be included in an Application for Payment.

5.7 The Owner shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of the Owner, the Contractor, Subcontractors, the Engineer and the Engineer's consultants in the Work, all of whom shall be listed as insured or additional insured parties.

5.8 All the policies of insurance (or the certificates or other evidence thereof) required to be purchased and maintained by the Owner in accordance with paragraphs 5.6 and 5.7 will contain a provision or endorsement that the coverage afforded will not be cancelled or materially changed or renewal refused until at least thirty days' prior written notice has been given to the Contractor by certified mail and will contain waiver provisions in accordance with paragraph 5.11.2.

5.9 The Owner shall not be responsible for purchasing and maintaining any property insurance to protect the interests of the Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are provided in the Supplementary Conditions. The risk of loss within the contractor or others suffering any such loss and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

5.10 If the contractor requests in writing that other special insurance be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof will be charged to the Contractor by appropriate Change Order or Written

Amendment. Prior to commencement of the Work at the site, the Owner shall in writing advise the Contractor whether such other insurance has been procured by the Owner.

5.11 WAIVER OF RIGHTS:

5.11.1 The Owner and the Contractor waive all rights against each other for all losses and damages caused by any of the perils covered by the policies of insurance provided in response to paragraphs 5.6 and 5.7 and any other property insurance applicable to the Work, and also waive all such rights against the Subcontractors, the Engineer, the Engineer's consultants and all other parties named as insured in such policies for losses and damages so caused. As required by paragraph 6.11, each subcontractor between the Contractor and a Subcontractor will contain similar waiver provisions by the Subcontractor in favor of the Owner, the Contractor, the Engineer, the Engineer's consultants and all other parties named as insured. None of the above waivers shall extend to the rights that any of the insured parties may have to the proceeds of insurance held by the Owner as trustee or otherwise payable under any policy so issued.

5.11.2 The Owner and the Contractor intend that any policies provided in response to paragraphs 5.6 and 5.7 shall protect all the parties insured and provide primary coverage for all losses and damages caused by the perils covered thereby. Accordingly, all such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any of the parties named as insured or additional insured, and if the insurers require separate waiver forms to be signed by the Engineer or the Engineer's consultant the Owner will obtain the same, and if such waiver forms are required of any same, and if such waiver forms are required of any Subcontractor, the Contractor will obtain the same.

RECEIPT AND APPLICATION OF PROCEEDS:

5.12 Any insured loss under the policies of insurance required by paragraphs 5.6 and 5.7 will be adjusted with the Owner and made payable to the Owner as trustee for the insured, as their interests may appear, subject to the requirements of any applicable mortgage clause and of paragraph 5.13. The Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.

5.13 The Owner as trustee shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within fifteen days after the occurrence of loss to the Owner's exercise of this power. If such objection were made, the Owner as trustee shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If required in writing by any party in interest, the Owner as trustee shall, upon the occurrence of an insured loss, give bond for the proper performance of such duties.

ACCEPTANCE OF INSURANCE:

5.14 If the Owner has any objection to the coverage afforded by or other provisions of the insurance required to be purchased and maintained by the Contractor in accordance with paragraphs 5.3 and 5.4 on the basis of its not complying with the Contract Documents, the Owner shall notify the Contractor in writing thereof within ten days of the date of delivery of such certificates to the Owner in accordance with paragraph 2.7. If the Contractor has any objection to the coverage afforded by or other provisions of the

policies of insurance required to be purchased and maintained by the Owner in accordance with paragraphs 5.6 and 5.7 on the basis of their not complying with the Contract Documents, the Contractor shall notify the Owner in writing thereof within ten days of the date of delivery of such certificates to the Contractor in accordance with paragraph 2.7. The Owner and the Contractor shall each provide to the other such additional information in respect of insurance provided by each as the other may reasonably request. Failure by the Owner or the Contractor to give any such notice of objection within the time provided shall constitute acceptance of such insurance purchased by the other as complying with the Contract Documents.

PARTIAL UTILIZATION – PROPERTY INSURANCE:

5.15 The Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, such use or occupancy may be accomplished in accordance with paragraph 14.10; provided that no such use or occupancy shall commence before the insurers providing the property insurance have acknowledged notice thereof and in writing effected the changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be cancelled or lapse on account of any such partial use or occupancy.

6.0 CONTRACTOR'S RESPONSIBILITIES

SUPERVISION AND SUPERINTENDENCE:

6.1 The Contractor shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. The Contractor shall be solely responsible for the means, methods, techniques, sequences and procedures of construction, but the Contractor shall not be responsible for the negligence of others in the design or selection of a specific means, method, technique, sequence of procedure of construction which is indicated in and required by the Contract Documents. The Contractor shall be responsible to see that the finished Work complies accurately with the Contract Documents.

6.2 The Contractor shall always keep on the work during its progress a competent resident superintendent, who shall not be replaced without written notice to the Owner and the Engineer except under extraordinary circumstances. The superintendent will be the Contractor's representative at the site and shall have authority to act on behalf on the Contractor. All communications given to the superintendent shall be as binding as if given to the Contractor.

LABOR, MATERIALS AND EQUIPMENT:

6.3 The Contractor shall provide competent, suitably qualified personnel to survey and lay out the work and perform construction as required by the Contractor Documents. The Contractor shall always maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours, and the Contractor will not permit overtime work or the performance of Work on Saturday, Sunday or any legal holiday without the Owner's written consent given after prior written notice to the Engineer.

6.4 Unless otherwise specified in the General Requirements, the Contractor shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction

equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

6.5 All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by the Engineer, the Contractor shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, with the instructions of the applicable Supplier except as otherwise provided in the Contract Documents; but no provision of any such instructions will be effective to assign to the Engineer, or any of the Engineer's consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.15 or 9.16.

ADJUSTING PROGRESS SCHEDULE:

6.6 The Contractor shall submit to the Engineer for acceptance (to the extent indicated in paragraph 2.9) adjustments in the progress schedule to reflect the impact thereon of new developments; these will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

6.7 SUBSTITUTES OR "OR-EQUAL" ITEMS:

6.7.1 Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of Supplier the naming of the item is intended to establish the type, function and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment or other Suppliers, may be accepted by the Engineer, if sufficient information is submitted by the Contractor to allow the Engineer to determine that the material or equipment proposed is equivalent or equal to that named. The procedure for review by the Engineer will include the following as supplemented in the General Requirements. Requests for review of substitute items of material and equipment will not be accepted by the Engineer from anyone other than the Contractor. If the Contractor wishes to furnish or use a substitute item of material or equipment, the Contractor shall make written application to the Engineer for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. The application will state that the evaluation and acceptance of the proposed substitute will not prejudice the Contractor's achievement of Substantial Completion on time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with the Owner for work on the Project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by the Engineer in evaluating the proposed substitute. The Engineer may require the Contractor to furnish at the Contractor's expense

additional data about the proposed substitute. The Engineer may require the Contractor's expense additional data about the proposed substitute.

6.7.2 If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents, the Contractor may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to the Engineer, if the Contractor submits sufficient information to allow the Engineer to determine that the substitute proposed is equivalent to that indicated or required by the Contract Documents. The procedure for review by the Engineer will be like that provided in paragraph 6.7.1 as applied by the Engineer and as may be supplemented in the General Requirements.

6.7.3 The Engineer will be allowed a reasonable time within which to evaluate each proposed substitute. The Engineer will be the sole judge of acceptability, and no substitute will be ordered, installed, or utilized without the Engineer's prior written acceptance, which will be evidenced, by either a Change Order or an approved Shop Drawing. The Owner may require the Contractor to furnish at the Contractor's expense a special performance guarantee or other surety with respect to any substitute. The Engineer will record time required by the Engineer and the Engineer's consultants in evaluating substitutions proposed by the Contractor and in making changes in the Contract Documents occasioned thereby. Whether or not the Engineer accepts a proposed substitute, the Contractor shall reimburse the Owner for the charges of the Engineer and the Engineer's consultants for evaluating each proposed substitute.

6.8 CONCERNING SUBCONTRACTORS, SUPPLIERS AND OTHERS:

6.8.1 The Contractor shall not employ and Subcontractor, Supplier or other person or organization (including those acceptable to the Owner and the Engineer as indicated in paragraph 6.8.2), whether initially or as a substitute, against whom the Owner or the Engineer may have reasonable objection. The Contractor shall not be required to employ any Subcontractor, Supplier or other person or organization to furnish or perform any of the Work against whom the Contractor has reasonable objection.

6.8.2 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers or other persons or organizations (including those who are to furnish the principal items of materials and equipment) to be submitted to the Owner in advance of the specified date prior to the Effective Date of the Agreement for acceptance by the Owner and the Engineer and if the Contractor has submitted a list thereof in accordance with the Supplementary Conditions, the Owner's or the Engineer's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or object ion in the bidding documents or the Contract Documents) of any such Subcontractor, Supplier or other person or organization so identified may be revoked on the basis of reasonable objection after due investigation, in which case the Contractor shall submit an acceptable substitute, the Contract Price will be increased by the difference in the cost occasioned by such substitution and an appropriate Change Order will be issued or Written Agreement signed. No acceptance by the Owner or the Engineer of any such Subcontractor, Supplier or other person or organization shall constitute a waiver of any right of the Owner or the Engineer to reject defective Work.

6.9 The Contractor shall be fully responsible to the Owner and the Engineer for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations

performing or furnishing any of the Work under a direct or indirect contract with the Contractor just as the contractor is responsible for the Contractor's own acts and omissions. Nothing in the Contract Documents shall create any contractual relationship between the owner or the Engineer and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of the Owner or the Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws and Regulations.

6.10 The divisions and sections of the Specifications and the identifications of any Drawings shall not control the Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

6.11 All Work performed for the Contractor by a Subcontractor will be pursuant to an appropriate agreement between the Contractor and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of the Owner and the Engineer and contains waiver provisions as required by paragraph 5.11. The Contractor shall pay each Subcontractor a just share of any insurance moneys received by the Contractor on account of losses under policies issued pursuant to paragraphs 5.6 and 5.7

PATENT FEES AND ROYALTIES:

6.12 The Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product or device is specified in the contract Documents for use in the performance of the Work and if to the actual knowledge of the Owner or the Engineer its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by the Owner in the Contract Documents. The Contractor shall indemnify and hold harmless the Owner and the Engineer and anyone directly or indirectly employed by either of them from and against all claims, damages, losses and expenses (including attorney's fees and court and arbitration costs) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the Work of any invention, design, process, product or device not specified in the Contract Documents, and shall defend all such claims in connection with any alleged infringement of such rights.

PERMITS:

6.13 Unless otherwise provided in the Supplementary Conditions, the Contractor shall obtain and pay for all construction permits and licenses. The Owner shall assist the Contractor, when necessary, in obtaining such permits and licenses. The Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids, or if there are no Bids on the Effective Date of the Agreement. The Contractor shall pay all charges of utility owners for connections to the Work, and the Owner shall pay all charges of such utility owners for capital costs related thereto such as plant investment fees.

6.14 LAWS AND REGULATIONS:

6.14.1 The Contractor shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither the Owner nor

the Engineer shall be responsible for monitoring the Contractor's compliance with any Laws or Regulations.

6.14.2 If the Contractor observes that the Specifications or Drawings are at variance with any Laws or Regulations, the Contractor shall give the Engineer prompt written notice thereof, and any necessary changes will be authorized by one of the methods indicated in paragraph 3.4. If the Contractor performs any Work knowing or having reason to know that it is contrary to such Laws or Regulations, and without such notice to the Engineer, the Contractor shall bear all costs arising there from; however, it shall not be the Contractor's primary responsibility to make certain that the specifications and Drawings are in accordance with such Laws and Regulations.

TAXES:

6.15 The Contractor shall pay all sales, consumer, use and other similar taxes, required to be paid by the Contractor in accordance with the Laws and Regulations of the place of the Project, which are applicable during the performance of the Work.

USE OF PREMISES:

6.16 The Contractor shall confine construction equipment, the storage of materials and equipment and the operations of workers to the Project site and land and areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. The Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the Work. Should any claim be made against the Owner or the Engineer by any such owner or occupant because of the performance of the Work, or the Contractor shall promptly attempt to settle with such other party by agreement or otherwise resolve the claim by arbitration or at law. The Contractor shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold the Owner and the Engineer harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any such other party against the Owner or the Engineer to the extent based on a claim arising out of the Contractor's performance of the Work.

6.17 During the progress of the Work, the Contractor shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the work the Contractor shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by the Owner. The Contractor shall restore to original condition all property not designated for alteration by the Contract Documents.

6.18 The Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall the Contractor subject any part of the Work or adjacent properly to stresses or pressure that will endanger it.

6.19 The Contractor shall maintain in a safe place at the site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Directive Changes, Field Orders and written interpretations and clarifications (issued pursuant to paragraph 9.4) in good order and annotated to show all changes made during

construction. These record documents together with approved samples and a counterpart of all approved Shop Drawings will be available to the Engineer for reference. Upon completion of the Work, these record documents, samples and Shop Drawings will be delivered to the Engineer for the Owner.

SAFETY AND PROTECTION:

6.20 The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. The Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

6.20.1 all employees on the Work and other persons and organizations who may be affected thereby;

6.20.2 all the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and

6.20.3 other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation or replacement in the course of construction.

The Contractor shall comply with all applicable Laws and Regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. The Contractor shall notify owners of adjacent property and of Underground Facilities and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury or loss to any property referred to in paragraph 6.20.2 or 6.20.3 caused, directly or indirectly, in whole or in part, by the Contractor, any Subcontractor, Supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by the Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of the Owner or the Engineer or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the Contractor). The Contractor's duties and responsibilities for the safety and protection of the Work shall continue until such time as all the Work is completed and the Engineer has issued a notice to the Owner and the Contractor in accordance with paragraph 14.13 that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.21 The Contractor shall designate a responsible representative at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated in writing by the Contractor to the Owner.

EMERGENCIES:

6.22 In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, the Contractor, without special instruction or authorization from the Engineer or the Owner, is obligated to act to prevent threatened damage, injury or loss. The Contractor shall give the Engineer prompt written notice if the Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If the Engineer determines that a change in the Contract Documents is required because of the action taken in response to an emergency,

a Work Directive change or Change Order will be issued to document the consequences of the changes or variations.

SHOP DRAWINGS AND SAMPLES:

6.23 After checking and verifying all field measurements and after complying with applicable procedures specified in the General Requirements, the Contractor shall submit to the Engineer for review and approval in accordance with the accepted schedule of Shop Drawings submissions (see paragraph 2.9), or for other appropriate action if so indicated in the Supplementary Conditions, five copies (unless otherwise specified in the General Requirements) of all Shop Drawings, which will bear a stamp or specific written indication that the Contractor has satisfied the Contractor's responsibilities under the Contract Documents with respect to the review of the submission. All submissions will be identified as the Engineer may require. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to enable the Engineer to review the information as required.

6.24 The Contractor shall also submit to the Engineer for review and approval with such promptness as to cause no delay in Work, all samples required by the Contract Documents. All samples will have been checked by and accompanied by a specific written indication that the Contractor has satisfied the Contractor's responsibilities under the Contract Documents with respect to the review of the submission and will be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which intended.

6.25.1 Before submission of each Shop Drawing or sample the Contractor shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar data with respect thereto and reviewed or coordinated each Shop Drawing or sample with other Shop Drawings and samples and with the requirements of the Work and the Contract Documents.

6.25.2 At the time of each submission, the Contractor shall give the Engineer specific written notice of each variation that the Shop Drawings or samples may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each Shop Drawing submitted to the Engineer for review and approval of each such variation.

6.26 The Engineer will review and approve with reasonable promptness Shop Drawings and samples, but the Engineer's review and approval will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences or procedures of construction (except where a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. The Contractor shall make corrections required by the Engineer and shall return the required number of corrected copies of Shop Drawings and submit as required new samples for review and approval. The Contractor shall direct specific attention in writing to revisions other than the corrections called for by the Engineer on previous submittals.

6.27 The Engineer's review and approval of shop Drawings or samples shall not relieve the Contractor from responsibility for any variation from the requirements of the Contract Documents unless the Contractor has in writing called the Engineer's attention to each such variation at the time of submission as required by paragraph 6.25.2 and the Engineer

has given written approval of each such variation by a specific written notation thereof incorporated in or accompanying the or Shop Drawing or sample approval; nor will any approval by the Engineer relieve the Contractor from responsibility for errors omissions in the Shop Drawings or from responsibility for having complied with the provisions of paragraph 6.25.1.

6.28 Where a Shop Drawing or sample is required by the Specifications, any related work performed prior to the Engineer's review and approval of the pertinent submission will be the sole expense and responsibility of the Contractor.

CONTINUING THE WORK:

6.29 The Contractor shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with the Owner. No work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.5 or as the Contractor and the Owner may otherwise agree in writing.

INDEMNIFICAITON:

6.30 To the fullest extent permitted by Laws and Regulations the Contractor shall indemnify and hold harmless the Owner and the Engineer and their consultants, agents and employees from and against all claims, damages, losses and expenses, direct, indirect or consequential (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs) arising out of or resulting from the performance of Work, provided that any such claim, damage, loss or expense (a) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom and (b) is caused in whole or in part by any negligent act or omission of the Contractor, any Subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable regardless of whether or not it is caused in part by a party indemnified hereunder or arises by or is imposed by Law and Regulations regardless of the negligence of any such party.

6.31 In any and all claims against the Owner or the Engineer or any of their consultants, agents or employees by any employee of the Contractor, any Subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.30 shall not be limited in any way by any limitation on the amount or type of damages, compensation benefits payable by or for the Contractor of any such Subcontractor or other person or organization under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

6.32 The obligations of the Contractor under paragraph 6.30 shall not extend to the liability of the Engineer, the Engineer's consultants, agents or employees arising out of the preparation or approval of maps, drawings, opinions, reports, surveys, Change Orders, designs or specifications.

7.0 OTHER WORK

RELATED WORK AT SITE:

7.1 The Owner may perform other work related to the Project at the site by the Owner's own forces, have other work performed by utility owners or let other direct contracts therefor which shall contain General Conditions like these. If the fact that such other work is to be performed was not noted in the Contract Documents, written notice thereof will be given

to the Contractor prior to starting any such other work; and, if the Contractor believes that such performance will involve additional expense to the Contractor or requires additional time and the parties are unable to agree as to the extent thereof, the Contractor may make a claim therefore as provided in Articles 11 and 12.

7.2 The Contractor shall afford each utility owner and other contractor who is a party to such a direct contract (or the Owner, if the Owner is performing the additional work with the Owner's employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work with theirs. The Contractor shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work. The Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of the Engineer and the others whose work will be affected. The duties and responsibilities of the Contractor under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of the Contractor in said direct contracts between the Owner and such utility owners and other contractors.

7.3 If any part of the Contractor's Work depends for proper execution or results upon the Work of any such other contractor or utility owner (or the Owner), the Contractor shall inspect and promptly report to the Engineer in writing any delays, defects or deficiencies in such work that render it unavailable or unsuitable for such proper execution and results. The Contractor's failure so to report will constitute an acceptance of the other work as fit and proper for integration with the Contractor's Work except for latent or non-apparent defects and deficiencies in the other work.

COORDINATION:

7.4 If the Owner contracts with others for the performance of other work on the Project at the site, the person or organization who will have authority and responsibility for coordination of the activities among the various prime contractors will be identified in the Supplementary Conditions, and the specific matters to be covered by such authority and responsibility will be itemized, and the extend of such authority and responsibilities will be provided, in the Supplementary Conditions. Unless otherwise provided in the Supplementary Conditions, neither the Owner nor the Engineer shall have any authority or responsibility in respect of such coordination.

8.0 OWNER'S RESPONSIBILITIES

8.1 The Owner shall issue all communications directly to the Contractor with a copy to the Engineer.

In case of termination of the employment of the Engineer, the Owner shall appoint an engineer against whom the Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer. Any dispute in connection with such appointment shall be subject to arbitration.

8.2 The Owner shall furnish the data required of the Owner under the Contract Documents promptly and shall make payments to the Contractor promptly after they are due as provided in paragraphs 14.4 and 14.13.

8.3 The Owner's duties in respect of providing lands and easements and providing basic land surveys to establish reference points are set forth in paragraphs 4.1 and 4.4. Paragraph 4.2 refers to the Owner's identifying and making available to the Contractor copies of reports

of exploration and tests of subsurface conditions at the site and in existing structures which have been utilized by the Engineer in preparing the Drawings and Specifications.

8.4 The Owner's responsibilities in respect of purchasing and maintaining liability and property insurance are set forth in paragraphs 5.5 and 5.8.

8.5 The Owner is obligated to execute Change Orders as indicated in paragraph 10.4.

8.6 The Owner's responsibility in respect of certain inspections, tests and approvals is set forth in paragraph 13.4.

8.7 In connection with the Owner's right to stop Work or suspend Work, see paragraphs 13.10 and 15.1. Paragraph 15.2 deals with the Owner's right to terminate services of the Contractor under certain circumstances.

9.0 ENGINEER'S STATUS DURING CONSTRUCTION

OWNER'S REPRESENTATIVE:

9.1 The Engineer will be the Owners representative during the construction period. The duties and responsibilities and the limitations of authority of the Engineer as the Owner's representative during construction are set forth in the Contract Documents and shall not be extended without written consent of the Owner and the Engineer.

VISIT TO SITE:

9.2 The Engineer will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. The Engineer will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Engineer's efforts will be directed toward providing for the Owner a greater degree of confidence that the completed Work will conform to the Contract Documents. On the basis of such visits and on-site observations as an experienced and qualified design professional, the Engineer will keep the Owner informed of the progress of the Work and will endeavor to guard the Owner against defects and deficiencies in the Work.

PROJECT REPRESENTATION:

9.3 If the Owner and the Engineer agree, the Engineer will furnish a Resident Project Representative to assist the Engineer in observing the performance of the Work. The duties, responsibilities, and limitations of authority of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions. If the Owner designates another agent to represent the Owner at the site who is not the Engineer's agent or employee, the duties, responsibilities and limitations of authority of such other person will be the same as those described for the Engineers agent.

CLARIFICATIONS AND INTERPRETATIONS:

9.4 The Engineer will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as the Engineer may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. If the Contractor believes that a written clarification or interpretation justifies an increase in the Contract Price or an extension of the Contract Time and the parties are unable to agree to the

amount or extent thereof, the Contractor may make a claim therefore as provided in Article 11 or Article 12.

AUTHORIZED VARIATIONS IN WORK:

9.5 The Engineer may authorize minor variations in the Work from the requirements of the Contract Documents, which do not involve an adjustment in the Contract Price or the Contract Time and are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order and will be binding on the Owner, and on the Contractor who shall perform the work involved promptly. If the Contractor believes that a Field Order justifies an increase in the Contract Price or an extension of the Contract Time and the parties are unable to agree as to the amount or extent thereof, the contractor may make a claim therefore as provided in Article 11 or 12.

REJECTING DEFECTIVE WORK:

9.6 The Engineer will have authority to disapprove or reject Work which the Engineer believes to be defective, and will also have authority to require special inspection or testing of the work as provided in paragraph 13.9, whether or not the Work is fabricated, installed or completed.

SHOP DRAWINGS, CHANGE ORDERS AND PAYMENTS:

9.7 In connection with the Engineer's responsibility for Shop Drawings and samples, see paragraphs 6.23 through 6.29 inclusive.

9.8 In connection with the Engineer's responsibilities as to Change Orders, see Articles 10, 11 and 12.

9.9 In connection with the Engineer's responsibilities in respect of Applications for Payment, etc., see Article 14.

DETERMINATIONS FOR UNIT PRICES:

9.10 The Engineer will determine the actual quantities and classifications of Unit Price Work performed by the Contractor. The Engineer will review with the Contractor Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Applicable for Payment or otherwise). The Engineer's written decisions thereon will be final and binding upon the Owner and the Contractor, unless, within ten days after the date of any such decision, either the Owner or the Contractor delivers to the other party to the Agreement and to the Engineer written notice of intention to appeal from such a decision.

DECISION ON DISPUTES:

9.11 The Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work hereunder. Claims, disputes and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the Work and claims under Articles 11 and 12 in respect of changes in the Contract Price or Contract Time will be referred initially to the Engineer in writing with a request for a formal decision in accordance with this paragraph, which the Engineer will render in writing within a reasonable time. Written notice of each such claim, dispute and other matter will be delivered by the claimant to the Engineer and the other party to the Agreement promptly (but in no event later than thirty days) after the occurrence of the event giving rise thereto, and written supporting data will be submitted to the Engineer and the other

party within sixty days after such occurrence unless the Engineer allows an additional period of time to ascertain more accurate data in support of the claim.

9.12 When functioning as interpreter and judge under paragraphs 9.10 and 9.11, the Engineer will not show partiality to the Owner or the Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by the Engineer pursuant to paragraphs 9.10 and 9.11 with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.16) will be a condition precedent to any exercise by the Owner or the Contractor of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such claim, dispute or other matter.

LIMITATIONS ON ENGINEER'S RESPONSIBILITIES:

9.13 Neither the Engineer's authority to act under this Article 9 or elsewhere in the Contract Documents nor any decision made by the Engineer in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of the Engineer to the Contractor, any Subcontractor, any Supplier, or any other person or organization performing any of the Work, or to any surety for any of them.

9.14 Whenever in the Contract Documents the terms "as ordered". "as directed". "As required", "as allowed", "as approved" or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper" or "satisfactory" or adjectives of like effect or import are used to describe a requirement, direction, review or judgment of the Engineer as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the Work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to the Engineer any duty or authority to supervise direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.15 or 9.16.

9.15 The Engineer will not be responsible for the Contractor's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and the Engineer will not be responsible for the Contractor's failure to perform or furnish the Work in accordance with the Contract Documents.

9.16 The Engineer will not be responsible for the acts or omissions of the Contractor or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

10.0 CHANGES IN THE WORK

10.1 Without invalidating the Agreement and without notice to any surety, the Owner may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by a Written Amendment, a Change Order, or a Work Directive Change. Upon receipt of any such document, the Contractor shall promptly proceed with the Work involved, which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

10.2 If the Owner and the Contractor are unable to agree as to the extent, if any, of an increase or decrease in the Contract Price or an extension or shortening of the Contract Time that should be allowed as a result of a Work Directive Change, a claim may be made therefor as provided in Article 11 or Article 12.

10.3 The Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Time with respect to any Work performed that is not required by the Contract Documents as amended, modified and supplemented as provided in paragraphs 3.4 and 3.5, except in the case of an emergency as provided in paragraph 6.22 and except in the case of uncovering Work as provided in paragraph 13.9.

10.4 The Owner and the Contractor shall execute appropriate Change Orders (or Written Amendments) covering:

10.4.1 changes in the Work which are ordered by the Owner pursuant to paragraph 10.1, are required because of acceptance of defective Work under paragraph 13.13 or correcting defective Work under paragraph 13.14, or are agreed to by the parties:

10.4.2 changes in the Contract Price or Contract Time which are agreed to by the parties; and

10.4.3 changes in the Contract Price or Contract Time, which embody the substance of any written decision, rendered by the Engineer pursuant to paragraph 9.11;

provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, the Contractor shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.29.

10.5 If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Time) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be the Contractor's responsibility, and the amount of each applicable Bond will be adjusted accordingly.

11.0 CHANGE OF CONTRACT PRICE

11.1 The Contract Price constitutes the Total compensation (subject to authorized adjustments) payable to the Contractor for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by the Contractor shall be at his expense without change in the Contract Price.

11.2 The Contract Price may only be changed by a Change Order or by a Written Amendment. Any claim for an increase or decrease in the Contract Price shall be based on written notice delivered by the party making the claim to the other party and to the Engineer promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within sixty days after such occurrence (unless the Engineer allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by claimant's written statement that the amount claimed covers all known amounts (direct, indirect and consequential) to which the claimant is entitled as a result of the occurrence of said event. All claims, for adjustment in the Contract Price, shall be determined by the Engineer, in accordance with paragraph 9.11, if the Owner and the Contractor cannot otherwise agree on the amount involved. No claim for an adjustment in the Contract Price will be valid if not submitted in accordance with this paragraph 11.2.

11.3 The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

11.3.1 Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved (subject to the provisions of paragraphs 11.9.1 through 11.9.3, inclusive).

11.3.2 By mutual acceptance of a lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 11.6.2.1).

11.3.3 Based on the Cost of the Work (determined as provided in paragraphs 11.4 and 11.5) plus a Contractor's Fee for overhead and profit (determined as provided in paragraphs 11.6 and 11.7).

COST OF THE WORK:

11.4 The term Cost of the Work means the sum of all costs necessarily incurred and paid by the contractor in the proper performance of the Work. Except as otherwise may be agreed to in writing by the Owner, such costs shall be in amounts no higher than those prevailing in the locality of the project, shall include only the following items and shall not include any of the costs itemized in paragraph 11.5:

11.4.1 Payroll costs for employees in the direct employ of the Contractor in the performance of the Work under schedules of job classifications agreed upon by the Owner and the Contractor. Payroll costs for employees not employed full time on the Work shall be apportioned based on their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise and payroll taxes, workers' or workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site. The expenses of performing Work after regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by the Owner.

11.4.2 Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to the Contractor unless the Owner deposits funds with the Contractor with which to make payments, in which case the cash discounts shall accrue to the Owner. All trade discounts, rebates and refunds and all returns from sale of surplus materials and equipment shall accrue to the Owner, and the Contractor shall make provisions so that they may be obtained.

11.4.3 Payments made by the Contractor to the Subcontractors for Work performed by Subcontractors. If required by the Owner, the Contractor shall obtain competitive bids from Subcontractors acceptable to the Contractor and shall deliver such bids to the Owner who will then determine, with the advice of the Engineer, which bids will be accepted. If a subcontract provides that the Subcontractor is to be paid based on Cost of the Work shall be determined in the same manner as the Contractor's Cost of the Work. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

11.4.4 Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys and accountants) employed for services specifically related to the Work.

11.4.5 Supplemental costs including the following:

11.4.5.1 The proportion of necessary transportation, travel and subsistence expenses of the Contractor's employees incurred in discharge of duties connected with the Work.

11.4.5.2 Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of the Contractor.

11.4.5.3 Rentals of all construction equipment and machinery and the parts thereof whether rented from the Contractor or others in accordance with rental agreements approved by the Owner with the advice of the Engineer, and the costs of transportation, loading, unloading, installation, dismantling and removal thereof-all in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

11.4.5.4 Sales, consumer, use of similar taxes related to the work, and for which the Contractor is liable, imposed by Laws and Regulations.

11.4.5.5 Deposits lost for causes other than negligence of the Contractor, any Subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

11.4.5.6 Losses and damages (and related expenses), not compensated by insurance or otherwise, to the Work or otherwise sustained by the Contractor in connection with the performance and furnishing of the work (except losses and damages within the deductible amounts of property insurance established by the Owner in accordance with paragraph 5.9), provided they have resulted from causes other than the negligence of the Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of the Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining the Contractor's Fee. If, however, any such loss or damage requires reconstruction and the Contractor is placed in charge thereof, the Contractor shall be paid for services a fee proportionate to that stated in paragraph 11.6.2.

11.4.5.7 The cost of utilities, fuel, and sanitary facilities at the site.

11.4.5.8 Minor expenses such as long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

11.4.5.9 Cost of premiums for additional Bonds and insurance required because of changes in the Work and premiums for property insurance coverage

within the limits of the deductible amounts established by the Owner in accordance with paragraph 5.9.

11.5 The term Cost of Work shall not include any of the following:

11.5.1 Payroll costs and other compensation of the Contractor's officers, executives, principals (of partnership and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by the Contractor whether at the site or in the Contractor's principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.4.1 or specifically covered by paragraph 11.4.4-all of which are to be considered administrative costs covered by the Contractor's Fee.

11.5.2 Expenses of the Contractor's principal and branch offices other than the Contractor's office at the site.

11.5.3 Any part of the Contractor's capital expenses, including interest on the Contractor's capital employed for the Work and charges against the Contractor for delinquent payments.

11.5.4 Cost of premiums for all Bonds and for all insurance whether the Contractor is required by the contract Documents to purchase and maintain the same (except for the cost of premiums covered by subparagraph 11.4.5.9 above).

11.5.5 Costs due to the negligence of the Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property.

11.5.6 Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 11.4.

CONTRACTOR'S FEE:

11.6 The Contractor's Fee allowed to the Contractor for overhead and profit shall be determined as follows:

11.6.1 a mutually acceptable fixed fee; or if none can be agreed upon:

11.6.2 a fee based on the following percentages of the various portions of the Cost of the Work:

11.6.2.1 for costs incurred under paragraph 11.4.1 and 11.4.2, the Contractor's shall be fifteen percent;

11.6.2.2 for costs incurred under paragraph 11.4.3, the Contractor's Fee shall be five percent; and if a subcontract is on the basis of Cost of the Work Plus a Fee, the maximum allowable to the Contractor on account of overhead and profit of all Subcontractors shall be fifteen percent;

11.6.2.3 no fee shall be payable on the basis of costs itemized under paragraphs 11.4.4, 11.4.5 and 11.5;

11.6.2.4 the amount of credit to be allowed by the Contractor to the Owner for any such change which results in a net decrease in cost will be the amount of the actual net decrease plus a deduction in the Contractor's Fee by an amount equal to ten percent of the net decrease; and

11.6.2.5 when both additions and credits are involved in any one change, the adjustment in the Contractor's Fee shall be computed based on the net change in accordance with paragraphs 11.6.2.1 through 11.6.4, inclusive.

11.7 Whenever the cost of any Work is to be determined pursuant to paragraph 11.4 or 11.5, the Contractor will submit in form acceptable to the Engineer an itemized cost breakdown together with supporting data.

CASH ALLOWANCES:

11.8 It is understood that the Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be done by such Subcontractors or Suppliers and for such sums within the limit of the allowances as may be acceptable to the Engineer. The Contractor agrees that:

11.8.1 The allowances include the cost to the Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes; and

11.8.2 The Contractor's costs for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances. No demand for additional payment on account of any thereof will be valid.

Prior to final payment, an appropriate Change Order will be issued as recommended by the Engineer to reflect actual amounts due the Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

UNIT PRICE WORK:

11.9.1 Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by the Contractor will be made by the Engineer in accordance with Paragraph 9.10.

11.9.2 Each unit price will be deemed to include an amount considered by the Contractor to be adequate to cover the Contractor's overhead and profit for each separately identified item.

11.9.3 Where the quantity of any item of Unit Price Work performed by the Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement and there is no corresponding adjustment with respect to any other item of Work and if the Contractor believes that the Contractor has incurred additional expense as a result thereof, the Contractor

may make a claim for an increase in the Contract Price in accordance with Article 11 if the parties are unable to agree as to the amount of any such increase.

12.0 CHANGE OF CONTRACT TIME

12.1 A Change Order or a Written Amendment may only change the Contract Time. Any claim for an extension or shortening of the Contract Time shall be based on written notice delivered by the party making the claim to the other party and to the Engineer promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within sixty days after such occurrence (unless the Engineer allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event. All claims, for adjustment in the Contract Time, shall be determined by the Engineer, in accordance with paragraph 9.11, if the Owner and the Contractor cannot otherwise agree. No claim for an adjustment in the Contract Time will be valid if not submitted in accordance with the requirements of this paragraph 12.1.

12.2 The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of the Contractor if a claim is made therefore as provided in paragraph 12.1. Such delays shall include, but not be limited to, acts or neglect by the Owner or others performing additional work as contemplated by Article 7, or to fires, floods, labor disputes, epidemics, abnormal weather conditions or acts of God.

12.3 All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of this Article 12 shall not exclude recovery for damages (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs) for delay by either party.

13.0 WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

WARRANTY AND GUARANTEE:

13.1 The Contractor warrants and guarantees to the Owner and the Engineer that all Work will be in accordance with the Contract Documents and will not be defective. Prompt notice of all defects shall be given to the Contractor. All defective Work, whether or not in place, may be rejected, corrected or accepted as provided in this Article 13.

ACCESS TO WORK:

13.2 The Engineer and Engineer's representatives, other representatives of the Owner, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting and testing, the Contractor shall provide proper and safe conditions for such access.

TESTS AND INSPECTIONS:

13.3 The Contractor shall give the Engineer timely notice of readiness of the Work for all required inspections, tests of approvals.

13.4 If Laws or Regulations of any public body having jurisdiction require any Work (of part thereof) to specifically be inspected, tested or approved, the Contractor shall assume full responsibility therefore, pay all costs in connection herewith and furnish the Engineer the required certificates of inspection, testing or approval. The Contractor shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with the Owner's or the Engineer's acceptance of a Supplier of materials or equipment proposed to be incorporated in the Work, or of materials or equipment submitted for approval prior to the Contractor's purchase thereof for incorporation in the Work. The cost of all inspections, tests, and approvals, in addition to the above, which are required by the Contract Documents, shall be paid by the Owner (unless otherwise specified).

13.5 All inspections, tests or approvals other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by organizations acceptable to the Owner and the Contractor (or by the Engineer if so specified).

13.6 If any Work (including the work of others) that is to be inspected, tested or approved is covered without written concurrence of the Engineer, it must, if requested by the Engineer, be uncovered for observation. Such uncovering shall be at the Contractor's intention to cover the same and the Engineer has not acted with reasonable promptness in response to such notice.

13.7 Neither observations by the Engineer nor inspections, tests or approvals by others shall relieve the Contractor from the Contractor's obligations to perform the Work in accordance with the Contract Documents.

UNCOVERING WORK:

13.8 If any Work is covered contrary to the written request of the Engineer, it must, if requested by the Engineer, be uncovered for the Engineer's observation and replaced at the Contractor's expense.

13.9 If the Engineer considers it necessary or advisable that covered Work be observed by the Engineer or inspected or tested by others, the Contractor, at the Engineer's request, shall uncover, expose or otherwise make available for observation, inspection or testing as the Engineer may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is defective, the Contractor shall bear all direct, indirect and consequential costs of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, (including but not limited to fees and charges of engineers, architects, attorneys and other professionals), and the Owner shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, may make a claim therefore as provided in Article 11. If, however, such Work is not found to be defective, the Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction; and, if the parties are unable to agree as to the amount or extent thereof, the Contractor may make a claim therefore as provided in Article 11 and 12.

OWNER MAY STOP THE WORK:

13.10 If the Work is defective, or the Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, the Owner may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of the Owner to stop the Work shall not give rise to

any duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other party.

CORRECTION OR REMOVAL OF DEFECTIVE WORK:

13.11 If required by the Engineer, the Contractor shall promptly, as directed, either correct all defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by the Engineer, remove it from the site and replace it with non-defective Work. The Contractor shall bear all direct, indirect, and consequential costs of such correction or removal (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) made necessary thereby.

TWO-YEARS CORRECTION PERIOD:

13.12 If within two years after the date of Substantial Completion or such longer period of time as may be prescribed by Laws and Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any work is found to be defective, the Contractor shall promptly, without cost to the Owner and in accordance with the Owner's written instructions, either correct such defective Work, or, if the Owner has rejected it, remove it from the site and replace it with non-defective Work. If the Contractor does not promptly comply with the terms of such instructions, or in an emergency where delay world cause serious risk of loss or damage, the Owner may have the defective Work corrected or the rejected Work removed and replaced, and all direct, indirect and consequential costs of such removal and replacement (including but not limited to fees and charges of engineers, architects, attorneys, and other professionals) will be paid by the Contractor. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

ACCEPTANCE OF DEFECTIVE WORK:

13.13 If, instead of requiring correction or removal and replacement of defective Work, the Owner (and, prior to the Engineer's recommendation of final payment, also the Engineer) prefers to accept it, the Owner may do so. The Contractor shall bear all direct, indirect and consequential costs attributable to the Owner's evaluation of and determination to accept such defective Work (such costs to be approved by the Engineer as to reasonableness and to include but not be limited to fees and charges of engineers, architects, attorneys and other professionals). If any such acceptance occurs prior to the Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and the owner shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, the Owner may make a claim therefor as provided in Article 11. If the acceptance occurs after such recommendation, an appropriate amount will be paid by the Contractor to the Owner.

OWNER MAY CORRECT DEFECTIVE WORK:

13.14 If the Contractor fails within a reasonable time after written notice of the Engineer to proceed to correct and to correct defective Work or to remove and replace rejected Work as required by the Engineer in accordance with paragraph 13.11, or if the Contractor fails to perform the Work in accordance with the Contract Documents, or if the Contractor fails to comply with any other provision of the Contract Documents, the Owner may, after seven days' written notice to the Contractor, correct and remedy any such deficiency. In exercising the rights and remedies under this paragraph the Owner may

exclude the Contractor from all or part of the site, take possession of all or part of the Work, and suspend the Contractor's services related thereto, take possession of the Contractor's tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which the Owner has paid the Contractor but which are stored elsewhere. The Contractor shall allow the Owner, the Owner's representatives, agents, and employees such access to the site as may be necessary to enable the Owner to exercise the rights and remedies under this paragraph. All direct, indirect and consequential costs of the Owner in exercising such rights and remedies will be charged against the Contractor in an amount approved as to reasonableness by the Engineer, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and the Owner shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, the Owner may make a claim therefore as provided in Article 11. Such direct, indirect and consequential costs will include but not be limited to fees and charges of engineers, architects, attorneys and other professionals, all court and arbitration costs and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of the Contractor's defective Work. The Contractor shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by the Owner of the Owner's rights and remedies hereunder.

14.0 PAYMENTS TO CONTRACTOR AND COMPLETION

SCHEDULE OF VALUES:

14.1 The schedule of values established as provided in paragraph 2.9 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to the Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

APPLICATION FOR PROGRESS PAYMENT:

14.2 At least twenty days before each progress payment is scheduled (but not more often than once a month), the Contractor shall submit to the Engineer for review an Application for Payment filled out and signed by the Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice or other documentation warranting that the Owner has received the materials and equipment free and clear of all liens, charges, security interests and encumbrances (which are hereinafter in these General Conditions referred to as "Liens") and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect the Owner's interest therein, all of which will be satisfactory to the Owner. The amount of retainage with respect to progress payments will be as stipulated in the Supplementary Conditions.

CONTRACTOR'S WARRANTY OF TITLE:

14.3 The Contractor warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to the Owner no later than the time of payment free and clear of all Liens.

REVIEW OF APPLICATIONS FOR PROGRESS PAYMENT:

14.4 The Engineer will, within five days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to the Owner, or return the Application to the Contractor indicating in writing the Engineer's reasons for refusing to recommend payment. In the latter case, the Contractor may make the necessary corrections and resubmit the Application. Ten days after presentation of the Application for Payment with the Engineer's recommendation, the amount recommended will (subject to the provisions of the last sentence of paragraph 14.7) become due and when due will be paid by the Owner to the Contractor.

14.5 The Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by the Engineer to the Owner, based on the Engineer's on-site observations of the Work in progress as an experienced and qualified design professional and on the Engineer's review of the Application for Payment and the accompanying date and schedules that the work has progressed to the point indicated; that, to the best of the Engineer's knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work, as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.10, and to any other qualifications stated in the recommendation); and that the Contractor is entitled to payment of the amount recommended. However, by recommending any such payment the Engineer will not thereby be deemed to have represented that exhaustive or continuous on-site inspections have been made to check the quality or the quantity of the Work beyond the responsibilities specifically assigned to the Engineer in the Contract Documents or that there may not be other matters or issues between the parties that might entitle the Contractor to be paid additionally by the Owner or the Owner to withhold payment to the Contractor.

14.6 Then Engineer's recommendation of final payment will constitute an additional representation by the Engineer to the Owner that the conditions precedent to the Contractor's being entitled to final payment as set forth in paragraph 14.13 have been fulfilled.

14.7 The Engineer may refuse to recommend the whole or any part of any payment if, in the Engineer's opinion, it would be incorrect to make such representations to the Owner. The Engineer may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended, to such extent as may be necessary in the Engineer's opinion to protect the Owner from loss because:

14.7.1 the Work is defective, or completed Work has been damaged requiring correction or replacement,

14.7.2 the contract Price has been reduced by Written Amendment or Change Order,

14.7.3 the Owner has been required to correct defective Work or complete Work in accordance with paragraph 13.14, or

14.7.4 of the Engineer's actual knowledge of the occurrence of any of the events enumerated in paragraphs 15.2.1 through 15.2.9 inclusive.

The Owner may refuse to make payment of the full amount recommended by the Engineer because claims have been made against the Owner on account of the

Contractor's performance or furnishing of the Work or Liens have been filed in connection with the Work or there are other items entitling the Owner to a set-off against the amount recommended, but the Owner must give the Contractor immediate written notice (with a copy to the Engineer) stating the reasons for such action.

SUBSTANTIAL COMPLETION:

14.8 When the Contractor considers the entire Work ready for its intended use the Contractor shall notify the Owner and the Engineer in writing that the entire Work is substantially complete (except for items specifically listed by the Contractor as incomplete) and request that the Engineer issue a certificate of Substantial Completion. Within a reasonable time thereafter, the Owner, the Contractor and the Engineer shall make an inspection of the Work to determine the status of completion; the Engineer will notify the Contractor in writing giving the reasons therefore. If the Engineer will prepare and deliver to the Owner a tentative certification of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. The owner shall have seven days after receipt of the tentative certificate during which to make written objection to the Engineer will within fourteen days after submission of the tentative certificate to the Owner notify the Contractor in writing, stating the reasons therefore. If, after consideration of the Owner's objections, the Engineer considers the Work substantially complete, the Engineer will within said fourteen days execute and deliver to the Owner and the Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as the Engineer believes justified after consideration of any objections from the Owner. At the time of delivery of the tentative certificate of Substantial Completion the Engineer will deliver to the Owner and the Contractor a written recommendation as to division of responsibilities pending final payment between the Owner and the Contractor with respect to security, operation, safety, maintenance, heat, utilities, insurance and warranties.

Unless the Owner and the Contractor agree otherwise in writing and so inform the Engineer prior to the Engineer's issuing the definitive certificate of Substantial Completion, the Engineer's aforesaid recommendation will be binding on the Owner and the Contractor until final payment.

14.9 The Owner shall have the right to exclude the Contractor from the Work after the date of Substantial Completion, but the Owner shall allow the Contractor reasonable access to complete or correct items on the tentative list.

PARTIAL UTILIZATION:

14.10 Use by the Owner of any finished part of the Work, which has specifically been identified in the Contract Documents, or which the Owner, the Engineer and the Contractor agree constitutes a separately functioning and useable part of the Work that can be used by the Owner without significant interference with the Contractor's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following:

14.10.1 The Owner at any time may request the Contractor in writing to permit the Owner to use any such part of the Work which the Owner believes to be ready for its intended use and substantially complete. If the Contractor agrees, the Contractor will certify to the Owner and the Engineer that said part of the Work is substantially complete and request the Engineer to issue a certificate of Substantial Completion for that part of the Work. The Contractor at any time may notify the Owner and the Engineer in writing that the Contractor considers any such part of the Work ready for its intended use and substantially complete

and request the Engineer to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, the Owner, the Contractor, and the Engineer shall make an inspection of that part of the Work to determine its status of completion. If the Engineer does not consider that part of the Work to be substantially complete, the provisions of paragraph 14.8 and 14.9 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

14.10.2 The Owner may at any time request the Contractor in writing to permit the Owner to take over operation of such part of the Work although it is not substantially complete. A copy of such request will be sent to the Engineer and within a reasonable time thereafter the Owner, the Contractor and the Engineer shall make an inspection of that part of the Work to determine its status of completion and will prepare a list of the items remaining to be completed or corrected thereon before final payment. If the Contractor does not object in writing to the Owner and the Engineer that such part of the Work is not ready for separate operation by the Owner, the Engineer will finalize the list of items to be completed or corrected and will deliver such list to the Owner and the Contractor together with a written recommendation as to the division of responsibilities pending final payment between the Owner and the Contractor with respect to security, operation, safety, maintenance, utilities, insurance, warranties and guarantees for that part of the Work which will become binding upon the Owner and the Contractor at the time when the Owner takes over such operation (unless they shall have otherwise agreed in writing and so informed the Engineer). During such operation and prior to Substantial Completion of such part of the Work, the Owner shall allow the Contractor reasonable access to complete or correct items on said list and to complete other related Work.

14.10.3 No occupancy or separate operation of part of the Work will be accomplished prior to compliance with the requirements of paragraph 5.15 in respect of property insurance.

FINAL INSPECTION:

14.11 Upon written notice from the Contractor that the entire Work or an agreed portion thereof is complete, the Engineer will make a final inspection with the Owner and the Contractor and will notify the Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. The Contractor shall immediately take such measures as are necessary to remedy such deficiencies.

FINAL APPLICATION FOR PAYMENT:

14.12 After the Contractor has completed all such corrections to the satisfaction of the Engineer and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents (as provided in paragraph 6.19) and other documents-all as required by the Contract Documents, and after the Engineer has indicated that the Work is acceptable (subject to the provisions of paragraph 14.16), the Contractor may make application for final payment following the procedure for progress payments. The final Application for payment shall be accompanied by all documentation called for in the Contract Documents, together with complete and legally effective releases or waivers (satisfactory to the Owner) of all Liens arising out of or filed in connection with the Work. In lieu thereof and as approved by the Owner, the Contract may furnish receipts or releases in full; an affidavit of the Contractor that the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness

connected with the Work for which the Owner or Owner's property might in any way be responsible, have been paid or otherwise satisfied; and consent of the surety, if any, to final payment. If any Subcontractor or Supplier fails to furnish a release or receipt in full, the Contractor may furnish a Bond or other collateral satisfactory to the Owner to indemnify the Owner against any Lien.

FINAL PAYMENT AND ACCEPTANCE:

14.13 If, on the basis of the Engineer's observation of the work during construction and final inspection, and the Engineer's review of the final Application for Payment and accompanying documentation all as required by the Contract Documents, the Engineer is satisfied that the Work has been completed and the Contractor's other obligations under the Contract Documents have been fulfilled, the Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing the Engineer's recommendation of payment and present the Application to the Owner for payment. Thereupon the Engineer will give written notice to the Owner and the Contractor that the work is acceptable subject to the provisions of paragraph 14.16. Otherwise, the Engineer will return the Application to the Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case the Contractor shall make the necessary corrections and resubmit the Application. Thirty days after presentation to the Owner of the Application and accompanying documentation, in appropriate form and substance, and with the Engineer's recommendation and notice of acceptability, the amount recommended by the Engineer will become due and will be paid by the Owner to the Contractor.

14.14 If, through no fault of the Contractor, final completion of the Work is significantly delayed and if the Engineer so confirms, the Owner shall upon receipt of the Contractor's final Application for Payment and recommendation of the Engineer, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by the Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.1, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Engineer with the Applications for such payment. Such Payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

CONTRACTOR'S CONTINUING OBLIGATION:

14.15 The Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by the Engineer, nor the issuance of a certificate of Substantial Completion, nor any payment by the Owner to the Contractor under the Contract Documents, nor any use or occupancy of the Work or any part thereof by the Owner, nor any act of acceptance by the Owner nor any failure to do so, nor any review and approval of a Shop Drawing or sample submission, nor the issuance of a notice of acceptability by the Engineer pursuant to paragraph 14.13, nor any correction of defective Work by the Owner will constitute an acceptance of Work not done in accordance with the Contract Documents or a release of the Contractor's obligation to perform the work in accordance with the Contract Documents (except as provided in paragraph 14.16).

WAIVER OF CLAIMS:

14.16.1 a waiver of all claims by the Owner against the Contractor, except claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.11 or from failure to comply with the Contract

Documents or the terms of any special guarantees specified therein; however, it will not constitute a waiver by the Owner of any rights in respect of the Contractor's continuing obligations under the Contract Documents; and

14.16.2 a waiver of all claims by the Contractor against the Owner other than those previously made in writing and still unsettled.

15.0 SUSPENSION OF WORK AND TERMINATION

OWNER MAY SUSPEND WORK:

15.1 The Owner may, at any time and without cause suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to the Contractor and the Engineer which will fix the date on which Work will be resumed. The Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension of the Contractor makes an approved claim therefore as provided in Articles 11 and 12, with the exception of the suspension of Work by the Owner for the purpose of a winter layover, such suspension by the Owner will be determined by the Owner and the Engineer, and will not be subject to any increase in the Contract Price of Time.

OWNER MAY TERMINATE:

15.2 Upon the occurrence of any one or more of the following events:

15.2.1 if the contractor commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if the Contractor takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such time relating to the bankruptcy or insolvency;

15.2.2 if a petition is filed against the Contractor under any chapter of the Bankruptcy Code as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against the Contractor under any other federal or state law in effect at the time relating to bankruptcy or insolvency;

15.2.3 if the Contractor makes a general assigned for the benefit of creditors;

15.2.4 if a trustee, receiver, custodian or agent of the Contractor is appointed under applicable law or under contract, whose appointment or authority to take charge of property of the Contractor is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of the Contractor's creditors;

15.2.5 if the Contractor admits in writing an inability to pay its debts generally as they become due;

15.2.6 if the Contractor persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.9 as revised from time to time);

15.2.7 if the Contractor disregards Laws or Regulations of any public body having jurisdiction;

15.2.8 if the Contractor disregards the authority of the Engineer; or

15.2.9 if the Contractor otherwise violates in any substantial way any provisions of the Contract Documents;

The Owner may, after giving the Contractor (and the surety, if there be one) seven days' written notice and to the extent permitted by Laws and Regulations, terminate the services of the Contractor, exclude the Contractor from the site and take possession of the Work and of all Contractor's tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by the Contractor (without liability to the Contractor for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which the Owner has paid the Contractor but which are stored elsewhere, and finish the Work as the Owner may deem expedient. In such case the Contractor shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct, indirect and consequential costs of completing the Work (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs) such excess will be paid to the Contractor. If such costs exceed such unpaid balance, the Contractor shall pay the difference to the Owner.

Such costs incurred by the Owner will be approved as to reasonableness by the Engineer and incorporated in a Change Order, but when exercising any rights or remedies under this paragraph the Owner shall not be required to obtain the lowest price for the Work performed.

15.3 Where the Contractor's services have been so terminated by the Owner, the termination will not affect any rights or remedies of the Owner against the Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due the Contractor by the Owner will not release the Contractor from liability.

15.4 Upon seven days' written notice to the Contractor and the Engineer, the Owner may, without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Agreement. In such case, the Contractor shall be paid for all Work executed and any expense sustained plus reasonable termination expenses, which will include, but not be limited to, direct, indirect and consequential costs (including, but not limited to, fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs).

CONTRACTOR MAY STOP WORK OR TERMINATE:

15.5 If, through no act or fault of the Contractor, the Work is suspended for a period of more than ninety days by the Owner or under an order of court or other public authority, or the Engineer fails to act on any Application for Payment within thirty days after it is submitted, or the Owner fails for thirty days to pay the Contractor any sum finally determined to be due, then the Contractor may, upon seven days' written notice to the Owner and the Engineer, terminate the Agreement and recover from the Owner payment for all Work executed and any expense sustained plus reasonable termination expenses. In addition and in lieu of terminating the Agreement, if the Engineer has failed to act on an Application for Payment or the Owner has failed to make any payment as aforesaid, the Contractor may upon seven days' written notice to the Owner and the Engineer stop the Work until payment of all amounts then due. The provisions of this paragraph shall not relieve the Contractor of the obligations under paragraph 6.29 to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with the Owner.

16.0 ARBITRATION

16.1 All claims, disputes and other matters in question between the Owner and the Contractor arising out of, or relating to the Contract Documents or the breach thereof (except for claims which have been waived by the making or acceptance of final payment as provided in paragraph 14.16) will be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association then obtaining subject to the limitations of this Article 16. This agreement so to arbitrate and any other agreement or consent to arbitrate entered in accordance herewith as provided in this Article 16 will be specifically enforceable under the prevailing law of any court having jurisdiction.

16.2 No demand for arbitration of any claim, dispute or other matter that is required to be referred to the Engineer initially for decision in accordance with paragraph 9.11 will be made until the earlier of (a) the date on which the Engineer has rendered a decision or (b) the tenth day after the parties have presented their evidence to the Engineer if a written decision has not been rendered by the Engineer before that date. No demand for arbitration of any such claim, dispute or other matter will be made later than thirty days after the date on which the Engineer has rendered a written decision in respect thereof in accordance with paragraph 9.11; and the failure to demand arbitration within said thirty days' period shall result in Engineer's decision after arbitration proceedings have been initiated, such decision may be entered as evidence but will not supersede the arbitration proceedings, except where the decision is acceptable to the parties concerned. No demand for arbitration of any written decision of the Engineer rendered in accordance with paragraph 9.10 will be made later than ten days after the party making such demand has delivered written notice of intention to appeal as provided in paragraph 9.10.

16.3 Notice of the demand for arbitration will be filed in writing with the other party to the Agreement and with the other party to the Agreement and with the American Arbitration Association, and a copy will be sent to the Engineer for information. The demand for arbitration will be made within the thirty-day or ten-day period specified in paragraph 16.2 as applicable, and in all other cases within a reasonable time after the claim, dispute or other matter in question has arisen, and in no event shall any such demand be made after the date when institution of legal or equitable proceedings based on such claim, dispute or other matter in question would be barred by the applicable statute of limitations.

16.4 No arbitration arising out of or relating to the Contract Documents shall include by consolidation, joinder or in any other manner any other person or entity (including the Engineer, the Engineer's agents, employees or consultants) who is not a party to this contract unless:

16.4.1 the inclusion of such other person or entity is necessary if complete relief is to be afforded among those who are already parties to the arbitration,

16.4.2 such other person or entity is substantially involved in a question of law or fact which is common to those who parties to the arbitration are already and which will arise in such proceeding, and

16.4.3 the written consent of the other person or entity sought to be included and of the Owner and the Contractor has been obtained for such inclusion, which consent shall make specified reference to this paragraph; but no such consent shall constitute consent to arbitration of any dispute not specifically described in such consent or to arbitration with any party not specifically identified in such consent.

16.5 The award rendered by the arbitrators will be final, judgment may be entered upon it in any court having jurisdiction thereof, and will not be subject to modification or appeal except to the extent permitted by Sections 10 and 11 of the Federal Arbitration Act (9 U.S.C. Sect. 10, 11).

17.0 MISCELLANEOUS

17.1 Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

COMPUTATION OF TIME:

17.2.1 When any time period is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.2.2 A calendar day of twenty-four hours measured from midnight to the next midnight shall constitute a day.

GENERAL:

17.3 Should the Owner or the Contractor suffer injury or damage to person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this paragraph 17.3 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

17.4 The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon the Contractor by paragraphs 6.30, 13.1, 13.12, 13.14, 14.3 and 15.2 and all of the rights and remedies available to the Owner and the Engineer there under, are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply. All representatives, warranties and guarantees made in the Contract Documents will survive final payment and termination or completion of the Agreement.

SECTION 00800
SUPPLEMENTARY CONDITIONS

1.0 INSURANCE

The limits of liability for the insurance coverage and worker's compensation, as required by paragraph 5.3 of the General Conditions, shall be provided in accordance with the following provisions.

1.1 Workers' Compensation Insurance

The Contractor shall maintain in full force and at all times Workers' Compensation for all labor employed on the project. Workers' Compensation coverage must meet the statutory obligations of the State and Employer's Liability insurance in the amount of $500,000 each policy, $500,000 each accident and disease. Contractor shall supply evidence of the same to the Town of Cumberland. In the event the Contractor is exempt from workers' compensation as a sole proprietorship, the Contractor will present proof of said exemption in the form and manner approved by the Rhode Island Department of Labor.

1.2 Contractor's Commercial General Liability Insurance

The Contractor shall carry Commercial General Liability Insurance (CGL) with broad form of Contractual General Liability Endorsement attached, providing for a per occurrence limit of liability of not less than One Million Dollars ($1,000,000) for all damages arising out of bodily injury or property damage. If Contractor's CGL policy is subject to an Annual Aggregate, said Aggregate must be in multiples of the per occurrence limit of liability. The Contractor will provide evidence of its General Liability policy to the Town of Cumberland and name the Town of Cumberland as an Additional Insured to the policy.

1.3 Comprehensive Automobile Liability and Property Damage Insurance

The Contractor shall carry and maintain in full force at all times during the engagement Comprehensive Automobile Liability Insurance covering all owned vehicles, hired vehicles, or non-owned vehicles in the amount of not less than Three Million Dollars ($3,000,000) per occurrence for all damages arising out of bodily injury and/or property damage. If Contractor's automobile liability policy is subject to an Annual Aggregate, said Aggregate must be in multiples of the per occurrence limit of liability The Contractor will provide evidence of its auto liability policy to the Town of Cumberland and name the Town of Cumberland as an Additional Insured to the policy.

All references in the General Conditions to Owners liability and property damage insurance shall be amended to indicate that the Town of Cumberland has obtained all municipal insurance required by law, regulation or ordinance for a public body and guarantees to the Contractor that such insurance will be maintained for the life of the Agreement. The Town therefore, will not provide to the Contractor certificates and other evidence of insurance described or referred to in the following sections of the General Conditions:

Paragraph(s) 2.7, 5.5, 5.6, 5.7, 5.8, 5.9, 5.10. 5.11.1, 5.11.2, 5.12, 5.13, 5.14, and 8.5.

SALES TAXES

Paragraph 6.15 of the General Conditions shall be amended to indicate that in Materials and equipment purchased for installation under this contract are exempt from the Rhode Island Sales Tax. The exemption from the Sales Tax shall be considered by the Contractor during bidding.

3.0 RETAINAGE

Section 14 of the General Conditions shall be amended to indicate that the Owner will retain 10% of the amount of each payment until final completion and acceptance of work covered by this contract in order to insure proper performance with contract provisions. At the time the contract is 60% complete the retainage may be reduced to 5% at the Owner's discretion.

4.0 OWNER'S INSPECTION

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 Owner has decided the question. 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, 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 Engineer in any way, nor releasing the Contractor from the fulfillment of the terms of the Contract.

5.0 EQUAL EMPLOYMENT OPPORTUNITY PROGRAM

During performance of the Work of the Contract, the Contractor will be required to follow an equal employment opportunity program complying with provisions of Executive Order No. 11246 of September 24, 1965, and the rules, regulations, and relevant orders of the Secretary of Labor.

Approval of the bidder's proposed equal employment opportunity program by the Owner and by the governmental agencies having jurisdiction will be a prerequisite to award of the Contract.

To be acceptable, the proposed equal employment opportunity program must contain the following stipulations, except as otherwise approved in advance.

A. There shall be no discrimination against any employee or applicant for employment because of race, creed, color, sex, age, religion, handicap, or national origin. Affirmative action will be taken to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, sex, age, religion, handicap, or national origin. Such action shall include, but not be limited to, the following:

(1) Employment, upgrading, demotion, or transfer;
(2) Recruitment or recruitment advertising;
(3) Layoffs or terminations;
(4) Rates of Pay or other forms of compensation; and
(5) Selection for training, including apprenticeship.

Notice shall be posted in conspicuous places, available to employees and applicants for employment, setting forth the provisions of this nondiscrimination clause.

B. All solicitations or advertisement for employees shall state that all qualified applicants will receive consideration for employment without regard to race, creed, color, sex, age, religion, handicap, or national origin.

C. Contractors shall send to each labor union or representative of workers with which they have a collective bargaining agreement or other contract of understanding, a notice to be provided advising the labor union of worker's' representative of the contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and they shall post copies of the notice in conspicuous places available to employees and applicants for employment.

D. Contractors shall comply with all provisions of Executive Order No. 11246 of September 24, 1965, and the rules, regulations, and relevant orders of the Secretary of Labor.

E. Contractors shall furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto as required by the Owner, for purposes of investigation to ascertain compliance with such rules, regulations, and orders. The contractors shall furnish, copies, as requested.

F. In the event of contractor's noncompliance with the nondiscrimination clauses of their contracts, or with any of such rules, regulations, or orders, their contracts may be cancelled, terminated, or suspended in whole or in part, and they may be declared ineligible for further contracts on governmentally assisted construction work. Other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

G. The contractors shall include the provisions of paragraphs "A" through "G" in every subcontract or purchase order so that such provisions will be binding upon each subcontractor or vendor.

Other programs in satisfactory use may be substituted in lieu of the basic program delineated above, subject to the approval of the Owner and all governmental agencies having jurisdiction.

6.0 RESPONSIBILITIES OF THE CONTRACTOR

Except as otherwise specifically stated in the Contract Documents, and Technical Specifications, the Contractor shall provide and pay for all materials, tools, labor, equipment, water, light, heat, power, telephone, transportation, superintendence, temporary construction of every nature, charges, levies, fees or other expenses, and all other services and facilities of every nature whatsoever necessary for the performance of the Contract and to deliver all improvements embraced in this Contract complete in every respect within the specified time.

Unless otherwise specified herein, all materials, workmanship, methods and practices utilized to perform the work embraced within the Contract shall conform to current Cumberland Department of Public Works Standards and the Rhode Island Standard Specifications for Road and Bridge Construction; Revision of 1994 with latest revisions or addenda.

7.0 SANITARY WASTE

Adequate sanitary conveniences for the use of workmen shall be provided within the Contractor's field office and/or in temporary, portable field enclosures that comply with the requirements of

local and state health authorities. If portable field enclosures are provided, they shall be located or relocated as directly by the Owner. Sanitary waste shall be treated and disposed of in a manner satisfactory to and as directed by the Engineer and the local and state health authorities; and under no circumstances shall sanitary wastes be allowed to flow on the surface of the ground.

8.0 INTOXICATING LIQUORS

The Contractor shall not sell and shall neither permit nor suffer the introduction or use of intoxicating liquors upon or about the work embraced in this Contract.

9.0 PROVISIONS FOR TRAFFIC

The Contractor shall not close or obstruct any portion of a street without obtaining permits therefore from the proper authorities. If any street or private way shall be rendered unsafe by the Contractor's operations, he shall make such repairs or provide such temporary ways or guards as shall be acceptable to the Owner.

Streets, roads, private ways, and walks shall be maintained passable by the Contractor at his expense, and the Contractor shall assume full responsibility for the adequacy and safety of the provisions made. He shall conduct his construction operations such that interference with the flow of vehicular and pedestrian traffic will be held to a minimum.

The Contractor shall cooperate in every way possible to maintain a flow of traffic through the site. The Contractor shall notify the Fire Department when any street is to be closed regardless of the length of time or time of day. All detours shall be signed, lighted, and barricaded as directed by the Owner or indicated on the drawings.

10.0 ESCULATION CLAUSE

The base price for liquid asphalt for this proposal is $ **485** per ton. Any increase or decrease in the price of liquid asphalt will result in a change of $_____ per ton for every $1.00 per ton increase or decrease in the price of liquid asphalt.

10 ABBREVIATIONS

Where any of the following abbreviations are used in the specifications, they shall have the meaning set forth opposite each, and their reference shall apply to the latest amendment or revision of same, unless otherwise specified.

AASHTO (AASHO) - American Association of State Highway Transportation Officials
AAN - American Association of Nurserymen
ASLA - American Society of Landscape Architects
ACI - American Concrete Institute
AISC - American Institute of Steel Construction
ASA - American Standards Association
ASTM - American Society for Testing Materials
ASCE - American Society for Civil Engineers
AWWA - American Water Works Association
AWS - American Welding Society
FHA - Federal Highway Administration: U.S. Department of Transportation
FSS - Federal Specifications and Standards - Federal Supply Service and the General Services Administration, Washington, D.C.
NBS - National Bureau of Standards
RIDOT - Rhode Island Department of Transportation
USS Gauge - United States Standard Gauge

SECTION 00900

GENERAL REQUIREMENTS AND SPECIAL PROVISIONS

PART 1 – SUMMARY OF WORK

1.1 GENERAL

A. The Scope of Work under this contract will generally consist of the preparation of the site for the specified improvements, construction of the Owner provided building, furnishing and installing building components and fixtures as outline in the Plans and Specifications, furnishing and installing site features and landscaping, and making the required utility connections at Diamond Hill Park located in Town of Cumberland.

PART 2 – UTILITY AND MUNICIPAL NOTIFICATION AND COORDINATION

2.1 The Contractor shall schedule his construction to allow for a coordinated highway and utility effort. Upon award, the Contractor shall notify the lead utility relative to his/her anticipated highway construction start date. The Contractor's main point of administrative contract shall be Robert Anderson, P.E., Director, Public Works Department (PWD); and the PWD field contact representative shall be James N'Tow, Assistant Engineer, Public Works Department. Immediately following the Pre-construction Conference, the Contractor shall initiate any survey layout required for utilities.

RIDOT Maintenance	401-222-2378,401-222-2450,401-568-5373
Town Police Dept.	401-333-2500
Pawtucket Water Supply Board	401-729-5000
Cumberland Water Dept.	401-658-0666
Cumberland Sewer Dept.	401-728-2400 X 122
RIDEM Oil Spills	401-222-1360
National Grid (Gas)	781-907-2841
National Grid (Electric)	(401) 784-7419

PART 3 – SEQUENCE OF CONSTRUCTION

3.1 At all times, the Contractor shall be required to maintain full access to Diamond Hill Park. During non-working hours (including evenings, weekends, and holidays) the Contractor must secure the work zone from access by the public.

3.2 The Contractor shall coordinate his work to ensure that all utility work may proceed without delay. The Contractor shall, immediately upon commencing work at the site, perform all work necessary for the preparation of utility company involvement prior to beginning any other work on the project.

PART 4 – STORAGE OF CONSTRUCTION MATERIALS AND/OR EQUIPMENT

The Contractor shall submit for approval the location of Material & Equipment Storage to the Engineer.

PART 5 – WINTER SHUTDOWN

The Winter Shutdown period shall be determined to be the period from December 15th through the following April 15th. The Contractor shall ensure that prior to winter shutdown all areas where existing pavement has been removed receives a new bituminous pavement course. All utility castings shall be set flush with new pavement and temporary striping installed prior to closing the project for the season.

PART 6 – COORDINATION WITH OTHER CONTRACTS

It shall be the Contractor's responsibility to coordinate, cooperate and schedule his work and all segments thereof with the Engineer, other contractors, utility owners, and applicable local authorities.

PART 7 – WORKER HEALTH AND SAFETY

The CONTRACTOR shall submit one copy of the CONTRACTOR'S Health and Safety Plan to the Engineer.

PART 8 – CONSTRUCTION MATERIALS – QUALITY ASSURANCE

All applicable materials to be utilized on the project shall be obtained from RIDOT approved sources which meet the material requirements of the RIDOT Standard Specifications for Roads and Bridges, latest edition.

PART 9 – CONTRACTOR'S COMPLIANCE:

The work associated with this Contract shall be in accordance with the specifications and guidelines set forth by the Rhode Island Department of Transportation. All Materials, Construction Methods and Specifications, shall conform to the RIDOT's *Standard Specifications for Road and Bridge Construction* (RIDOT BLUE BOOK). If a conflict arises between the Technical Specification for this Contract and the State's Standard, then the RIDOT Standard shall prevail or the more stringent Standards shall be used. All applicable materials used on the project shall be from State Approved Sources. All procurement shall follow Rhode Island General Laws 37-2. It is imperative that the Contractor pay Prevailing Wage (RIGL 37-13-8).

PART 10 – MEASUREMENT AND PAYMENT FOR LUMP SUM CONTRACT

The Lump Sum Price stated in the Proposal shall constitute full compensation for all labor, equipment, materials, and all incidental and appurtenant work required or necessary to satisfactorily complete the specified work in accordance with the Drawings and Specifications. Partial payment requests shall be submitted to the Town at the end of each month during construction.

At the Pre-Construction Conference, the Contractor shall submit to the Owner and Engineer a breakdown of the Lump Sum Price listed in the Proposal. Breakdown shall list the major items of work on the Project and respective portion of the total Lump Sum Price. The sum of the prices for Contractor's major items of work shall equal the Lump Sum Price listed in the Proposal. The breakdown is required only to serve as a basis for determining percentage of lump sum total completed during Contractor's billing cycle. Contractor's lump sum breakdown is subject to review and approval by the Engineer.

Monthly pay estimates shall be generated by the Contractor and submitted to the Engineer. The estimate shall be broken down according to the Lump Sum Breakdown of Items as submitted by the Contractor and approved by the Engineer. Contractor shall submit five (5) copies of the monthly pay estimate to the Engineer for review and approval. Once approved, the Engineer shall submit the pay estimate to the Owner for processing along with letter certified by the Engineer that the work has been completed in conformance with the Drawings and Specifications.

Additions/reductions in the scope of work shall be processed as a Change Order to the Contract Price. Refer to Section 00700 Change of Contract Price. In the event of a Change to the Total Contract Price, the Contractor may be required to submit a revised Lump Sum Breakdown at the Engineer's discretion.

PART 11 - CLAIMS FOR ADJUSTMENTS AND DISPUTES:

If the contractor deems that additional compensation is due for work or material not clearly covered in the Contract, the Contractor shall notify both the Town Engineer in writing of its intention to make a claim for such additional compensation before beginning of continuing the affected work; also, the Contractor shall proceed diligently with the performance of the contract pending the final resolution of any request for relief, payment, claims, appeal or action arising under the contract, and shall comply with any decision of the Engineer. If such notification is not given, or the Contractor does not afford the Engineer proper facilities for keeping a strict account of the actual costs, the Contractor thereby waives any claim for additional compensation. Notice by the Contractor and the fact that the Town Engineer has kept an account of the actual cost of the claim, shall not be construed as substantiating the validity of the claim

TECHNICAL SPECIFICATIONS

All work done under this contract shall be in conformance with the Rhode Island Department of Transportation (RIDOT) Standard Specifications for Road and Bridge Construction, 2004 Edition with latest addenda, latest edition of the Manual on Uniform Traffic Control Devices with revisions, and the latest edition of American Standard for Nursery Stock.

The following items reflect specifications particular to this Project. As such, they amend and/or supplement the provisions governing the item, as described in the following Technical Specifications.

In various places of the Contract Documents, the words “State”, “Department”, "Town of Cumberland” and “Engineer” are intended to mean the “Town of Cumberland” or its assigned representative.

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02100	MOBILIZATION, SITE PREPARATION, AND DEMOBILIZATION
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02115	TREE PROTECTION
02200	EARTH EXCAVATION, BACKFILL, FILL AND GRADING
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02950	PLANTING
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SECTION 02100 – MOBILIZATION, SITE PREPARATION, AND DEMOBILIZATION

PART 1 - GENERAL

1.01 DESCRIPTION:

A. The work specified in this section includes:

1. Mobilization of all personnel and equipment;
2. Preparing construction sites for construction operations;
3. Materials to be removed and stockpiled;
4. Identifying and verifying survey control points as shown on the Drawings (if applicable);
5. Protecting survey monuments from injury or defacement,
6. Protecting utilities and other existing facilities,
7. Provision of traffic control, if applicable;
8. Site clean-up
9. Demobilization of all personnel and equipment.

B. Related Work Described Elsewhere:

1. Section 01500 - Temporary Facilities and Controls

1.02 CONSTRUCTION STAGING/STOCKPILE AREAS:

A. Obtaining staging areas is the sole responsibility of the Contractor.

B. Staging areas within the park is permitted with the prior consent of and coordination with the Town, but in no case shall any such staging or stocking be located within any regulated wetland area unless approved by RIDEM.

PART 2 - PRODUCTS

2.01 MATERIALS AND EQUIPMENT:

A. Materials to be Removed and Stockpiled

1. Materials directed to be removed and stockpiled which are the property of the Town, shall be removed, transported to and stacked in a location directed by the Owner's Representative. All materials shall be neatly stacked as directed.

2. If the Owner's Representative determines that any part of the stockpiled materials are unsuitable for re-use on the site or by the Town, such materials shall become the property of the Contractor and he shall legally dispose of them away from the site.

B. Temporary chain-link fence, when required, shall be provided, installed, and maintained at all specified locations or as directed by the Owner. At the completion of all work at the site, the Contractor shall remove all temporary fencing and restore the site to its original or better condition.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

A. Unpaved construction site entrance roadway and any truck parking areas shall be covered with crushed stone to reduce vehicle tracking of sediments. Any tracked debris from the site present on Diamond Hill Road shall be addressed and swept daily to remove any excess mud, dirt, or rock originating from the site. Trucks hauling material shall be covered and equipped with gates that prevent material from falling out. Catch basins within 100 feet of site entry and exit locations shall be protected with inlet sediment control devices and maintained for the duration of the work.

B. Identify, clearly mark and protect all survey monuments, as well as any adjacent contractors' work and facilities (if applicable). Repair or replace at Contractor's sole expense if damaged by Contractor.

C. Protect existing culverts, sewers, and all other utilities including gas, telecommunications, electricity, and water. Repair or replace at Contractor's sole expense if damaged by Contractor.

D. Barricade or backfill all open excavations, holes, trenches, and depressions occurring at construction sites or occurring as part of this work.

E. Traffic Control: Conform to Subsection 3.04 of this specification.

3.02 TEMPORARY CONSTRUCTION FACILITIES AND UTILITIES

A. Make arrangements for storage of materials and equipment in designated locations at the construction site.

B. Plastic construction fence or snow fencing if installed shall be maintained in good condition. Provide barricades, barrels, fencing and/or other barriers around excavations and trenches as required for safety. Upon completion, temporary fencing shall be removed and the affected area restored to a condition equal to or better than existed prior to the start of the work.

3.03 SITE MAINTENANCE

A. Keep all surface irregularities of the construction site evenly graded to prevent the generation of impact noise and ground vibrations by passing vehicles.

B. Control dust from Contractor operations in accordance with specified dust control measures.

C. Maintain the site during construction in a manner that will not obstruct operations on street areas. Proceed with the work in an orderly manner, maintaining the construction site free of debris and unnecessary equipment or materials.

D. Legally dispose of all debris, rubbish, hazardous materials, oil, and grease in accordance.

E. Maintain safety and security of the construction site at all times.

3.04 TRAFFIC CONTROL

A. The Contractor shall provide appropriate traffic control in accordance with Section 01500, TEMPORARY FACILITIES AND CONTROLS, of this specification. The purposes of the traffic control are 1) to ensure that his operations in the project area are performed in a safe and orderly manner, and 2) to minimize the impact of truck and equipment traffic and noise on adjacent properties near the project area. The Contractor shall be responsible for obtaining any and all required permits and approvals, setting up and coordinating the local police department.

3.05 DEMOBILIZATION

A. Upon substantial completion of the work, Contractor shall remove all excess materials, equipment, construction debris, temporary measures (fencing, signs, barriers, etc.) from the project area, and shall leave the site in suitable condition for full occupancy and use by the Owner. The sedimentation and erosion controls installed as part of the Work may not necessarily be removed at this time (see below).

B. The Owner's Representative shall be the sole judge of whether the site has been suitably cleaned.

C. Upon suitable stabilization of all disturbed "erodible" areas (e.g. acceptable level of grass growth in loamed and seeded areas, mulch applied and stable in planting areas, etc.), contractor shall remove and legally dispose of all sedimentation and erosion control measures (silt fence, hay bales, catch basin inserts, etc.).

END OF SECTION

SECTION 02105 – MAINTENANCE OF SITE

PART 1 – GENERAL

1.1 GENERAL

A. This item shall consist of site maintenance during the demolition and construction phases of the Work. Work items shall include, but not be limited to the, cleanup during construction operations, sweeping of the Park comfort station 'porch' and doorway thresholds, as well as adjacent sidewalks, the removal of trash, any covering of stockpiled material as ordered by the Owner's Representative.

PART 2 - PRODUCTS - **NOT APPLICABLE**

PART 3 - EXECUTION

3.1 METHODS, EQUIPMENT AND MATERIALS

A. The methods, equipment and materials used for maintenance of the site shall be acceptable to the Owner's Representative prior to performing any of the maintenance work included herein.

B. The frequency of maintenance operations shall be as required to maintain the site in a generally clean and orderly condition, and/or as directed by the Owner.

C. The Contractor shall take particular care to implement and properly maintain soil erosion and sedimentation control measures in accordance with the plans and specifications, and/or as appropriate or necessary during the course of the work; this shall include supplementing or modifying the original soil erosion and sedimentation control measures as needed to address changes to the site during the course of construction.

3.2 USE OF SITE DURING CONSTRUCTION

A. Contractor is apprised that Diamond Hill Park is a public park, and portions of the park not within the project limits shall remain open to the public during construction, to the maximum extent practicable.

B. Contractor shall ensure that the site is maintained during the course of construction sufficiently to allow for public access to and use of portions of the park not within the project limits.

END OF SECTION

SECTION 02115 – TREE PROTECTION

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes

1. Requirements for furnishing and placing standardized snow fencing or construction fencing at locations shown as indicated on the Plans or as directed by the Engineer, all in accordance with these Specifications..

1.02 REFERENCES

A. State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.

1.03 SUBMITTALS

A. Shop Drawings

1. Provide sieve analysis when gradation requirements are given in the Specification.

1.04 QUALITY ASSURANCE

A. Field Samples

1. The attention of the Contractor is directed to the fact that all materials furnished by the Contractor to be incorporated into the Work shall be subject to the inspection of the Engineer. The Engineer shall be the sole judge as to the acceptability of proposed materials and said judgement shall be final, conclusive, and binding.

PART 2 PRODUCTS

2.01 MATERIALS

A. TREE PROTECTION

1. Shall be in accordance with the State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.
2. Shall be standardized snow fencing or construction fencing and standard steel posts a minimum of 8 feet in length.
3. Engineer may elect to sample material supplied at the source.

PART 3 EXECUTION

3.01 INSTALLATION

A. Tree Protection

1. The Tree Protection shall be placed around the tree in a circumferential manner as indicated on the Plans. It securely erected and be vertically plumb. The Tree Protection shall not be secured to the tree in any manner. At no time shall restraining lines be secured to the tree or to surrounding vegetative growth. The Tree Protection shall be removed when all mechanical work within the project areas has been completed and approved. Removal of the fence shall be approved by the Engineer.

3.02 FIELD QUALITY CONTROL

A. Site Tests

1. In accordance with SECTION 01400.

END OF SECTION

SECTION 02200 – EARTH EXCAVATION, BACKFILL, FILL AND GRADING

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes

1. Requirements for; excavating in earth for trenches and structures; backfilling excavations; furnishing necessary material; compaction; constructing embankments and fills; miscellaneous earth excavations and miscellaneous grading.

B. Related Sections

1. Section 01780 – Closeout Submittals
2. Section 01400 – Quality Requirements
3. Section 02215 - Aggregate Materials
4. Section 03300 – Cast-In-Place Concrete

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM).

1. D1557, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3 (2,700 kN-m/m^3)).

B. State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.

1.03 MEASUREMENT AND PAYMENT PROCEDURES

A. Test Pits

1. Where determination of the exact location of pipe or other underground structure is necessary for doing the work properly, the Contractor may be required to excavate test pits to determine such locations. Test Pits shall be conducted at the Contractor's expense and shall be considered incidental to the overall quantity of unclassified excavation.

1.04 QUALITY ASSURANCE

A. Field Samples

1. Provide samples of materials as requested by the Owner's Representative, prior to delivery of materials on site, in order to facilitate field-testing of compaction operations and material properties.

1.05 PROJECT/SITE CONDITIONS

A. Existing Conditions

1. There may be pipes, drains, and other utilities in locations not indicated on drawings, no attempt has been made to show all services and completeness or accuracy of information given is not guaranteed.
2. Soil investigation data is not warranted to indicate actual conditions. Owner does not assume responsibility for variations in kind, depth, quantity and condition of soils; they disclaim responsibility for accuracy, true location, and extent of soils investigation that has been prepared by others; and they further disclaim responsibility for interpretation of that data by Contractor as in projecting soil bearing values, rock profiles, soil stability, and presence, level and extent of underground water.
3. Additional test boring and other exploratory operations may be made by Contractor at no additional cost to the Owner.

1.06 MAINTENANCE

A. Maintain all work in accordance with SECTION 01780.

1.07 USE OF EXPLOSIVES

A. Use of explosives is not permitted.

1.08 SUBMITTALS

A. Shop drawings shall be submitted in accordance with the requirements as specified in Section 01330, Submittals.

B. Provide the following submittals:

1. Certification, test results, source, and samples for all imported earth materials. Submit bag samples (20 lbs. minimum) of each type of fill material to be used for backfilling to the Owner's Representative at least 10 working days in advance of its required use. Representative samples of the excavated fill material that will be used for backfill shall also be submitted for testing.
2. Copies of any road-openings, excavation permits obtained that are required by state and local governing authorities.

1.09 IMPORTED MATERIAL ACCEPTANCE

A. All imported earth materials specified in this section are subject to the following requirements:

1. The Contractor shall make all gradation tests to locate acceptable sources of imported material. The Contractor shall perform a minimum of two initial gradation tests for all material to be imported from off-site locations. For each additional 500 cubic yards of material, the contractor shall perform one additional gradation test. Certification that the material conforms to the Specification requirements along with copies of the test results from a qualified commercial testing laboratory shall be submitted to the Owner's Representative for approval at least 14 calendar days before the material is required for use. All material samples shall be a minimum of 20 pounds and furnished by the Contractor at the Contractor's sole expense. Samples shall be representative and clearly marked to show the source of the material and the intended use on the project. Sampling of the material source shall be done by the Contractor in accordance with ASTM D75. Tentative acceptance

of the material shall be based on an inspection of the source by the Owner's Representative and/or the certified test results submitted by the Contractor to the Owner's Representative at the Owner's discretion. No imported materials shall be delivered to the site until the proposed source and the Owner's Representative tentatively accepted materials tests in writing. Final acceptance will be based on Quality Control and Quality Assurance tests made on samples of material taken from the completed and compacted course.

2. Gradation tests for the proposed materials shall be made on samples taken at the place of production prior to shipment. Tests shall be forwarded to the Owner's Representative within 48 hours of testing.
3. If tests conducted by the Contractor or the Owner's Representative indicate that the material does not meet Specification requirements, material placement will be terminated until corrective measures are taken. Material that does not conform to the Specification requirements that is placed in the work shall be removed and replaced at the Contractor's sole expense. Re-testing of material that does not meet specification requirements shall be performed at the Contractor's sole expense.
4. The Contractor may be asked (at the Owner's discretion) to sample all imported soil at a minimum frequency of one (1) per five hundred (500) cubic yards to verify materials are free of contamination. The soil shall be tested for the following: volatile organic compounds (VOC's) (EPA method 8260), Poly-Nuclear Aromatic Hydrocarbons (PAH's) (EPA method 8270), total Petroleum Hydrocarbons (TPH), and RCRA 8 Metals.
5. Imported soils with levels of contamination above residential direct exposure criteria shall not be used onsite.

PART 2 PRODUCTS

2.01 MATERIALS

A. Suitable Aggregate

1. The nature of materials will govern both acceptability for backfill and methods best suited for placement and compaction.
2. All material whether from excavations or from borrow pits, after being placed and properly compacted, shall make a dense stable fill and containing no vegetation, masses of roots, individual roots more than 12 inches long, or more than 1/2 inch in diameter, stones over 6 inches in diameter, or porous matter.
3. Organic matter in any aggregate shall be well distributed and shall be of a minor quantity.

B. Trench and Excavation Backfill

1. In general, and unless other material is indicated on drawings or specified, material used for backfilling trenches and excavations shall be suitable material which was removed in the course of making the construction excavations. If sufficient suitable material is not available from the excavations, the backfill material shall be crushed stone, gravel borrow or select borrow as directed in according to respective Specification Sections.
2. Existing material must meet the gradation requirements specified in RIDOT Standard Specification, with 100% Passing 3-inch Square Mesh Sieves, to be considered suitable

material to be used for backfilling trenches and excavations, unless determined otherwise by the Owner's Representative.

C. Structure Backfill

1. Unless otherwise indicated or specified, all fill and backfill under structures and pavement adjacent to structures shall be compacted gravel borrow containing not more than 10 percent material passing a 200 sieve. When coarse aggregate and fine aggregate are indicated or specified for use under structures, they shall conform to the requirements for coarse and fine aggregate specified in SECTION 03300.

D. Filling and Embankment Backfill

1. Suitable selected materials available from the excavations and not required for backfill around pipes or against structures may be used for filling and building embankments, except as otherwise specified. Material needed in addition to that available from construction operations shall be obtained from suitable gravel banks or other suitable deposits. The Contractor shall furnish, at his own expense, all borrow material needed on the work.

E. Additional materials

1. Concrete: In accordance with SECTION 03300.
2. Crushed stone: In accordance with SECTION 02215.
3. Gravel borrow: In accordance with SECTION 02215.
4. Select borrow: In accordance with SECTION 02215.

2.02 SOURCE QUALITY CONTROL

A. Provide the Owner's Representative with access to location of the Contractor's off-site sources of materials.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify all existing utilities and facilities prior to excavation.

3.02 PROTECTION

A. Utilities

1. Support and protect from damage existing pipes, poles, wires, fences, curbing, property line markers, and other structures, which the Owner's Representative decides must be preserved in place without being temporarily or permanently relocated.
2. Restore items damaged during construction without compensation, to a condition at least equal to that prior to construction.

B. Trees, Shrubs and Hedges

1. Provide tree and shrub protection devises in accordance with the plans and RIDOT Standard Specifications to protect trees from injury from piled material, equipment, operations or otherwise.
2. Employ excavating machinery of suitable type and size and operate with care to prevent injury to plants referenced herein and noted not to be cut and particularly to overhanging branches and limbs.
3. When trimming is required, utilize a saw or lopper, and make all cuts smooth and neat without splitting or crushing.
4. Protect by suitable means or temporarily replant and maintain cultivated hedges, shrubs, and plants that may be injured by the Contractor's operations.
5. Replant in their original positions and care for until growth is re-established, once the construction operations have been substantially completed.
6. If cultivated hedges, shrubs, and plants are injured to such a degree as to affect their growth or diminish their beauty or usefulness, they shall be replaced by items of kind and quality at least equal to those that existed prior to the start of the Work.
7. Branches, limbs, and roots greater than 1.5” dia. shall not be cut except by permission of the Owner.

C. Paved Surfaces

1. Do not use or operate tractors, bulldozers, or other power-operated equipment with treads or wheels shaped as to cut or injure paved surfaces.
2. All surfaces that have been injured by the Contractor’s operations shall be restored to a condition at least equal to what existed prior to start of the Work.
3. Suitable materials and methods shall be used for such restoration.

3.03 PREPARATION

A. Pavement Removal

1. Remove existing pavement only as necessary for the prosecution of the work.
2. The Owner’s Representative may require that pavement be cut with pneumatic tools or saws without extra compensation to Contractor, where in the opinion of the Owner’s Representative it is necessary to prevent damage to the remaining road surface.
3. Dispose of large pieces of broken pavement before proceeding with excavation.

B. Top Soil Removal

1. From areas where excavations are to be made, loam and topsoil shall be carefully removed and separately stored to be used again as directed; or, if the Contractor prefers not to separate surface materials, he shall furnish, as directed, loam and topsoil at least equal in quantity and quality to that excavated.

C. Subgrade

1. Remove loam and topsoil, loose vegetable matter, stumps, large roots, rock, concrete, debris etc., from areas where embankments will be built or material will be placed for grading.
2. Shape as indicated on the drawings and prepare by forking, furrowing, or plowing to bond first layer of the new material placed.
3. The Owner's Representative shall reserve the right to require the Contractor to perform (or have performed) field density testing of any area(s) of subgrade material prior to the placement of gravel borrow base course. In the event that a prepared area is found not to meet the minimum relative density for the subgrade, the Contractor shall be responsible for providing whatever effort is required to achieve the required relative density prior to placing the gravel borrow base, and for re-testing the area to verify that the required density has been met, at no additional expense to the Owner.

3.04 RELOCATION AND REPLACEMENT OF EXISTING STRUCTURES

A. The structures to which the provisions of this article apply include pipes, wires, and other structures that meet all of the following:

1. Are not indicated on the drawings or otherwise provided for;
2. Encroach upon or are encountered near and substantially close to parallel to the edge of the excavation;
3. In the opinion of the Owner's Representative shall impede progress to such an extent that satisfactory construction cannot proceed until they have been changed in location, removed (to be later restored), or replaced.

B. In removing existing pipes or other structures, the Contractor should use care to avoid damage to materials, and the Owner's Representative shall include for payment only those new materials that, in his judgment, are necessary to replace those unavoidably damaged.

C. Whenever the Contractor encounters certain existing structures as described above and is so ordered in writing, he shall do the whole or such portions of the work as he may be directed to change the location of, remove and later restore, or replace such structures, or to assist the Owner thereof in so doing. For all such work, the Contractor shall be paid under such items of work as may be applicable, otherwise as Extra Work.

D. When fences interfere with the Contractor's operations, he shall remove and (unless otherwise specified) later restore them to a condition which existed prior to the start of the Work, all without additional compensation. The restoration of fences shall be done as promptly as possible and not left until the end of the construction period.

E. Underdrains

1. Temporary underdrains, if used, shall be laid in trenches beneath the grade of the structure. Trenches shall be of suitable dimensions to provide room for the chosen size of underdrain and its surrounding gravel.
2. Underdrains, if used, shall be laid at a suitable distance below the bottom of the normal excavation and with open joints wrapped in cheesecloth or filter fabric approved by the Engineer, and entirely surrounded by graded gravel, or crushed stone to prevent the

admission of sand or other soil into the underdrains. The distance between the bottom of the pipe or structure and the top of the bell of the underdrain pipe shall be at least 3 in. unless otherwise permitted. The space between the underdrain and the pipe or structure shall be filled with graded gravel or crushed stone, which shall be rammed if necessary and left with a surface suitable for laying the pipe or building the structure.

3.05 EXCAVATION

A. Execute operation of dewatering, sheeting and bracing without undermining or disturbing foundations of existing structures or of work previously completed under this contract.

B. Excavate to widths that provide suitable room for:

1. Building structures, roadways, installing curbing and or laying and jointing piping.

C. Render bottom of excavations firm, dry and acceptable in all respects.

D. Do not plow, scrap or dig by machinery, earth at finished subgrade that results in disturbance of material below subgrade, unless indicated or specified, and remove with pick and shovel the last of material to be excavated, just before placing pipe, masonry or other structure.

E. Make all excavations in open, except as otherwise specified or permitted.

F. Excavation Near Existing Facilities

1. As the excavation approaches pipes, conduits, or other underground structures, digging by machinery shall be discontinued and the excavation shall be done by means of hand tools. Such manual excavation when incidental to normal excavation shall be included in the work to be done under items involving normal excavation.

G. Unauthorized Excavation

1. If the bottom of any excavation is taken out beyond the limits indicated or prescribed, the resulting void shall be backfilled at the Contractor's expense with thoroughly compacted gravel borrow, if the excavation was for a pipeline, or with Class B concrete, if the excavation was for a masonry structure.

H. Unsuitable Material

1. If material unsuitable for foundation (in the opinion of the Owner) is found at or below the grade to which excavation would normally be carried in accordance with the drawings and/or specifications, the Contractor shall remove such material to the required width and depth and replace it with thoroughly compacted, crushed stone, gravel borrow, fine aggregate or concrete as directed.

3.06 TRENCHING

A. Trench Excavation

1. Where pipe is to be laid in specified bedding material or concrete cradle, the trench may be excavated by machinery to, or to just below, the designated subgrade, provided that the material remaining at the bottom of the trench is no more than slightly disturbed, as approved by the Engineer.

2. Where pipe is to be laid directly on the trench bottom, the lower part of trenches in earth shall not be excavated to subgrade by machinery, but, just before the pipe is to be placed, the last of the material to be excavated shall be removed by means of hand tools to form a flat or shaped bottom, true to grade, so that the pipe will have a uniform and continuous bearing and support on firm and undisturbed material between joints except for limited areas where the use of pipe slings may have disturbed the bottom.

B. Depth of Trench

1. Excavate trench to depths permitting the pipe to be laid at the elevations, slopes, or depths of cover indicated on the drawings, and at uniform slopes between indicated elevations.

C. Width of Trench

1. Excavate trench as narrow as practicable and do not widen by scraping or loosening materials from the sides. Every effort shall be made to keep the sides of the trenches firm and undisturbed until backfilling has been completed and consolidated.
2. Excavate trenches with approximately vertical sides between the elevation of the center of the pipe and an elevation 1 ft. above the top of the pipe.

D. Trench Excavation in Fill

1. If pipe is to be laid in embankments or other recently filled material, the material shall first be placed to the top of the fill or to a height of at least 1 ft. above the top of the pipe, whichever is the lesser. Particular care shall be taken to ensure maximum consolidation of material under the pipe location. The pipe trench shall then be excavated as though in undisturbed material.

E. Length of trench open at any one time will be controlled by conditions, subject to any limits that may be prescribed by the Owner.

3.07 BACKFILLING

A. General

1. Frozen material shall not be placed in the backfill, nor shall backfill be placed upon frozen material. Previously frozen material shall be removed or shall be otherwise treated as required, before new backfill is placed.

B. Fill and Backfill Under Structures

1. The fill and backfill materials shall be placed in layers not exceeding 6 in. in thickness. Unless otherwise indicated or specified, each layer shall be compacted to 95 percent in accordance with ASTM D1557.

C. Backfilling Around Structures

1. Do not place backfill against or on structures until they have attained sufficient strength to support the loads (including construction loads) to which they shall be subjected, without distortion, cracking, or other damage. As soon as practicable after the structures are structurally adequate and other necessary work has been done, special leakage tests, if required, shall be made. Backfilling shall start promptly after the completion of such tests,

and shall then proceed until its completion. The best of the excavated materials shall be used in backfilling within 2 ft. of the structure. Unequal soil pressures shall be avoided by depositing the material evenly around the structure.

2. The material shall be placed and compacted to 90 percent in accordance with ASTM D1557 unless otherwise indicated or specified.

D. Backfilling Pipe Trenches

1. As soon as practicable after the pipes have been laid and the joints have acquired a suitable degree of hardness, if applicable, or the structures have been built and are structurally adequate to support the loads, including construction loads to which they will be subjected, the backfilling shall be started and thereafter it shall proceed until its completion.

2. With the exception mentioned below in this paragraph, trenches shall not be backfilled at pipe joints until after that section of the pipeline has successfully passed any specified tests required. Should the Contractor wish to minimize the maintenance of lights and barricades and the obstruction of traffic, he may, at his own risk backfill the entire trench, omitting or including backfill at joints as soon as practicable after the joints have acquired a suitable degree of hardness, if applicable, and the related structures have acquired a suitable degree of strength. However, he shall be responsible for removing and later replacing such backfill, at his own expense, should he be ordered to do so in order to locate and repair or replace leaking or defective joints or pipe.

3. No stone or rock fragment larger than 12 in. in greatest dimension shall be placed in the backfill nor shall large masses of backfill material be dropped into the trench in such a manner as to endanger the pipeline. If necessary, a timber grillage shall be used to break the fall of material dropped from a height of more than 5 ft. Pieces of bituminous pavement shall be excluded from the backfill unless their use is expressly permitted, in which case they shall be broken up as directed.

4. Zone Around Pipe

   a. Backfilled with the materials and to the limits indicated on the drawings.
   b. Material shall be compacted to 90 percent by tamping.

5. Excavated material that is acceptable to the Owner's Representative for surfacing or pavement subbase shall be placed at the top of the backfill to such depths as may be specified elsewhere or as directed. The surface shall be brought to the required grade and stones raked out and removed.

E. Placing and Compacting Embankment Material

1. After the subgrade has been prepared as hereinbefore specified, the material shall be placed thereon and built up in successive layers until it has reached the required elevation.

2. Layers shall not exceed 8 in. in thickness before compaction. In embankments at structures, the layers shall have a slight downward slope away from the structure; in other embankments the layers shall have a slight downward slope away from the center. In general, the finer and less pervious materials shall be placed against the structures or in the center, and the coarser and more pervious materials, upon the outer parts of embankments.

3. Each layer of material shall be compacted by the use of approved rollers or other approved means so as to secure a dense, stable, and thoroughly compacted mass. At such points as

cannot be reached by mobile mechanical equipment, the materials shall be thoroughly compacted by the use of suitable power-driven tampers.

4. Previously placed or new materials shall be moistened by sprinkling water on the surface, if required, to ensure proper bond and compaction. No compacting shall be done when the material is too wet, from either rain or too great an application of water, to compact it properly; at such times the work shall be suspended until the previously placed and new materials have dried out sufficiently to permit proper compaction, or such other precautions shall be taken as may be necessary to obtain proper compaction.

3.08 METHODS OF COMPACTION

A. Tamping and Rolling

1. Deposit backfill material and spread in uniform, parallel layers not exceeding 8 in. thick before compaction. Before the next layer is placed, each layer shall be tamped to obtain a thoroughly compacted mass. Care shall be taken that the material close to the bank, as well as in all other portions of the trench, is thoroughly compacted. When the trench width and the depth to which backfill has been placed are sufficient to make it feasible, and it can be done effectively and without damage to the pipe, backfill may, on approval, be compacted by the use of suitable rollers, tractors, or similar power equipment instead of by tamping. For compaction by tamping (or rolling), the rate at which backfilling material is deposited in the trench shall not exceed that permitted by the facilities for its spreading, leveling, and compacting.

2. If necessary to ensure proper compaction by tamping (or rolling), the backfill material shall first be wet by sprinkling. However, no compaction by tamping (or rolling) shall be done when the material is too wet either from rain or too great an application of water to be compacted properly; at such times the work shall be suspended until the previously placed and new materials have dried out sufficiently to permit proper compacting, or such other precautions shall be taken as may be necessary to obtain proper compaction.

B. Miscellaneous Requirements.

1. Whatever method of compacting backfill is used, care shall be taken that stones and lumps shall not become nested and that all voids between stones shall be completely filled with fine material. Only suitable quantities of stones and rock fragments shall be used in the backfill; the Contractor shall, as part of the work done under the items involving earth excavation and rock excavation as appropriate, furnish and place all other necessary backfill material.

3.09 DISPOSAL OF SURPLUS EXCAVATED MATERIALS

A. No excavated materials shall be removed from the site of the work or disposed of by the Contractor except as directed or permitted by the Owner.

B. Surplus excavated materials suitable for backfill shall be used to backfill normal excavations in rock or to replace other materials unacceptable for use as backfill; shall be neatly deposited and graded so as to make or widen fills, flatten side slopes, or fill depressions; or shall be neatly deposited for other purposes within a haul of 1 mile from the point of excavation; all as directed or permitted and without additional compensation.

C. Surplus excavated materials not needed as specified above shall be hauled away and dumped by the Contractor, at his expense, at appropriate locations, and in accordance with arrangements made by him.

3.10 DUST CONTROL

A. Maintain the area of activities by sweeping and sprinkling of streets to minimize the creation and dispersion of dust during the progress of the Work. If the Owner's Representative decides that it is necessary to use calcium chloride for more effective dust control, the Contractor shall furnish and spread the material, as directed.

3.11 BRIDGING TRENCHES

A. Provide suitable and safe bridges and other crossings made from steel plates of adequate thickness where required for the accommodation of travel, and to provide access to private property during construction if determined necessary. Remove once crossings are no longer needed.

3.12 FIELD QUALITY CONTROL

1. Sieve analysis are required for all in-situ materials or aggregate and soils delivered to the job site to be used in the Work. Sieve analysis to be stamped and signed by a Professional Engineer registered in the State of Rhode Island.
2. Soil compaction testing for trench bedding and backfill shall be performed for every three hundred (300) linear feet of excavated trench at each compacted backfill layer, but no less than two tests. Contractor shall be responsible for all testing.
3. Soil compaction testing for paved areas shall be performed for every 5,000 square feet, but no less than three tests per lift. Contractor shall be responsible
4. Soil compaction testing shall be performed for subgrade areas for every 5,000 square feet of proposed parking lot areas. Contractor shall be responsible for all costs.
5. In accordance with SECTION 01400.

3.13 CARE AND RESTORATION OF PROPERTY

A. Restoration of existing property or structures shall be done as promptly as practicable, and not left until the end of the construction period.

END OF SECTION

SECTION 02210 – ROCK EXCAVATION

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes

1. Requirements for removal and disposal of rock.

B. Related Sections

1. Section 02200-Earth Excavation, Backfill, Fill and Grading

1.02 DEFINITIONS

A. Rock, wherever used as the name of an excavated material to be excavated, shall mean only boulders and pieces of concrete and masonry exceeding one (1) cu. yd. in volume, or igneous, sedimentary, metamorphic, and conglomerate rock that, in the opinion of the Owner's Representative, requires for its removal drilling & blasting, wedging, sledging, barring, or breaking up with a power-operated tool. No soft or disintegrated rock which can be removed with a hand pick or power-operated excavator or shovel, no loose, shaken, or previously blasted rock or broken stone in rock fillings, or elsewhere, and no rock exterior to the maximum limits of measurement allowed, which may fall into the excavation, will be measured or allowed as "rock."

1.03 REQUIREMENTS

A. Excavate rock if encountered, to the lines and grades indicated on the drawings or as directed, dispose of the excavated material, and furnish acceptable material for backfill in place of the excavated rock.

B. Excavate rock in pipe trenches to a limit that provides 6-inches clearance minimum from the pipe after it has been laid. Before the pipe is laid, the trench shall be backfilled to the correct subgrade with thoroughly compacted, suitable material or, when so specified or indicated on the drawings, with the same material as that required for bedding the pipe, furnished and placed at the expense of the Contractor.

C. The use of explosives shall not be allowed.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 EXCESS ROCK EXCAVATION

A. If rock is excavated beyond the limits of payment indicated on the drawings, specified, or authorized in writing by the Owner's Representative, the excess excavation, whether resulting from over-breakage or other causes, shall be backfilled by and at the expense of the Contractor, as specified below in this section.

B. In pipe trenches, excess excavation below the elevation of the top of the bedding, cradle, or envelope shall be filled with material of the same type, placed and compacted in the same manner, as specified for the bedding, cradle, or envelope. Excess excavation above said elevation shall be filled with earth as specified in the article titled "Backfilling Pipe Trenches" in SECTION 02200.

C. In excavations for structures, excess excavation in the rock beneath foundations shall be filled with 3000 psi concrete. Other excess excavation shall be filled with earth as specified in the article titled "Backfilling Around Structures" in SECTION 02200.

3.02 SHATTERED ROCK

A. If the rock below proposed subbase depth is shattered due to drilling operations of the Contractor, and the Owner's Representative considers such shattered rock to be unfit for foundations, the shattered rock shall be removed and the excavation shall be backfilled with concrete as required, except that in pipe trenches screened gravel shall be used for backfill. All such removal and backfilling shall be done by and at the expense of the Contractor.

3.03 PREPARATION OF ROCK SURFACES

A. Whenever so directed during the progress of the work, remove all dirt and loose rock from designated areas and shall clean the surface of the rock thoroughly, using steam to melt snow and ice, if necessary. Water in depressions shall then be removed as required so that the whole surface of the designated area can be inspected to determine whether seams or other defects exist.

B. The surfaces of rock foundations shall be left sufficiently rough to bond well with the masonry and embankments to be built thereon, and if required, shall be cut to rough benches or steps.

C. Before any masonry or embankment is built on or against the rock, the rock shall be scrupulously freed from all vegetation, dirt, sand, clay, boulders, scale, excessively cracked rock, loose fragments, ice, snow, and other objectionable substances. Picking, barring, wedging, streams of water under sufficient pressure, stiff brushes, hammers, steam jets, and other effective means shall be used to accomplish this cleaning. Remove free water left on the surface of the rock.

3.04 REMOVAL OF BOULDERS

A. Remove piles of boulders and loose rock encountered within the limits of earth embankments and dispose in a suitable place.

3.05 DISPOSAL OF EXCAVATED ROCK

A. All excavated rock shall be handled, transported and disposed of by the Contractor, at his expense, at appropriate locations, and in accordance with arrangements made by him without additional cost to the Owner.

B. Excavated rock may be used in backfilling trenches subject to the following limitations:

1. Pieces of rock larger than permitted under the article titled "Backfilling Pipe Trenches" in SECTION 02200 shall not be used for this purpose.

2. The quantity of rock used as backfill in any location shall not be so great as to result in the formation of voids.
3. Rock backfill shall not be placed within 36 in. of the surface of the finish grade.

C. Surplus excavated rock shall be disposed of as specified for surplus excavated material as specified in SECTION 02200.

3.06 BACKFILLING ROCK EXCAVATIONS

A. Where rock has been excavated and the excavation is to be backfilled, the backfilling above normal depth shall be done as specified in SECTION 02200. If material suitable for backfilling is not available in sufficient quantity from other excavations, the Contractor shall furnish, at his own expense, suitable material from outside sources.

END OF SECTION

SECTION 02215 – AGGREGATE MATERIALS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes

1. Requirements for furnishing and placing materials that include Crushed Stone and Gravel Borrow.
2. Location of specified materials as detailed on the Drawings or as directed by the Owner's Representative for excavation below normal depth, utility support, replacement of unsuitable material or elsewhere, as ordered.

B. Related Sections

1. Section 02200 - Earth Excavation, Backfill, Fill and Grading.

1.02 REFERENCES

A. American Association of State Highway and Transportation Officials (AASHTO).

1. T11, Amount of Material Finer than 0.075 mm Sieve in Aggregate
2. T27, Sieve Analysis of Fine and Coarse Aggregates.

B. State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.

C. American Society for Testing and Materials (ASTM).

1. D1557, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3 (2,700 kN-m/m^3).

1.03 DEFINITIONS

A. The term Screened Gravel as used in these Contract Documents shall mean Crushed Stone.

1.04 SUBMITTALS

A. Shop Drawings

1. Provide sieve analysis when gradation requirements are given in the Specification.

B. Samples

1. Furnish representative sample including location of source with Shop Drawing transmittal sheet.

1.05 QUALITY ASSURANCE

A. Field Samples

1. The attention of the Contractor is directed to the fact that all materials furnished by the Contractor to be incorporated into the Work shall be subject to the inspection of the Owner's Representative. The Owner's Representative shall be the sole judge as to the acceptability of proposed materials and said judgement shall be final, conclusive, and binding.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Storage and Protection

1. Place excavated materials and equipment to be incorporated in the Work so as not to injure any part of the Work or existing facilities and so that free access can be had at all times to all parts of the Work and to all public utility installations in the vicinity of the Work.
2. Materials shall be kept neatly piled and compactly stored in such locations as will cause a minimum of inconvenience to the public and adjoining properties.

B. Handling

1. Handle, haul, and distribute materials and all surplus materials on the different portions of the Work, required to complete the Work in accordance with the Contract Documents.
2. Provide suitable storage room for materials and equipment during the progress of the Work, and be responsible for the protection, loss of, or damage to materials and equipment furnished under this Contract, until the final completion and acceptance of the Work.
3. Pay all storage and demurrage charges by transportation companies and vendors.

PART 2 PRODUCTS

2.01 MATERIALS

A. Crushed Stone

1. Shall be in accordance with the State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.
2. Clean, hard, and durable particles or fragments, free from dirt, vegetation, or other objectionable matter, and free from an excess of soft, thin elongated, laminated or disintegrated pieces.

B. Gravel Borrow

1. Granular material well graded from fine to coarse with a maximum size of 3 inches, obtained from approved natural deposits and unprocessed except for the removal of unacceptable material and stones larger than the maximum size permitted.
2. Gravel shall not contain vegetation, masses of roots, or individual roots more than 18 inches long or more than 1/2 inches in diameter.
3. Gravel shall be substantially free from loam and other organic matter, clay and other fine or harmful substances.

4. Shall be in accordance with the State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.

2.02 SOURCE QUALITY CONTROL

A. Test, Inspection

1. Engineer may elect to sample material supplied at the source.
2. Assist the Engineer and/or personnel from the designated testing laboratory in obtaining samples.

PART 3 EXECUTION

3.01 INSTALLATION

A. Crushed Stone

1. Spread in layers of uniform thickness not greater than 6 inches.
2. Set thoroughly by means of a suitable vibrator or mechanical tamper.

B. Gravel Borrow

1. Spread in layers of uniform thickness not exceeding 6 inches before compaction and moistened or allowed to dry as directed.
2. Compact thoroughly by means of suitable power-driven tampers or other power-driven equipment.
3. Compaction shall conform to 95% of minimum dry density per ASTM D1557.
4. The percolation rate for the compacted gravel borrow shall not exceed 5 minutes per inch.

3.02 FIELD QUALITY CONTROL

A. Site Tests

1. In accordance with SECTION 01400.

END OF SECTION

SECTION 02218 – DENSE GRADED GRAVEL PATH

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes

1. Requirements for furnishing and placing materials that include Dense Graded Gravel Path and Gravel Borrow.

B. Related Sections

1. Section 02200 - Earth Excavation, Backfill, Fill and Grading.

1.02 REFERENCES

A. American Association of State Highway and Transportation Officials (AASHTO).

1. T11, Amount of Material Finer than 0.075 mm Sieve in Aggregate
2. T27, Sieve Analysis of Fine and Coarse Aggregates.

B. State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.

C. American Society for Testing and Materials (ASTM).

1. D1557, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3 (2,700 kN-m/m^3).

1.03 SUBMITTALS

A. Shop Drawings

1. Provide sieve analysis when gradation requirements are given in the Specification.

B. Samples

1. Furnish representative sample including location of source with Shop Drawing transmittal sheet.

1.04 QUALITY ASSURANCE

A. Field Samples

1. The attention of the Contractor is directed to the fact that all materials furnished by the Contractor to be incorporated into the Work shall be subject to the inspection of the Owner's Representative. The Owner's Representative shall be the sole judge as to the acceptability of proposed materials and said judgement shall be final, conclusive, and binding.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Storage and Protection

1. Place excavated materials and equipment to be incorporated in the Work so as not to injure any part of the Work or existing facilities and so that free access can be had at all times to all parts of the Work and to all public utility installations in the vicinity of the Work.
2. Materials shall be kept neatly piled and compactly stored in such locations as will cause a minimum of inconvenience to the public and adjoining properties.

B. Handling

1. Handle, haul, and distribute materials and all surplus materials on the different portions of the Work, required to complete the Work in accordance with the Contract Documents.
2. Provide suitable storage room for materials and equipment during the progress of the Work, and be responsible for the protection, loss of, or damage to materials and equipment furnished under this Contract, until the final completion and acceptance of the Work.
3. Pay all storage and demurrage charges by transportation companies and vendors.

PART 2 PRODUCTS

2.01 MATERIALS

A. Dense Graded Gravel

1. Shall be in accordance with the State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.
2. Clean, hard, and durable particles or fragments of stone, free from dirt, vegetation, or other objectionable matter, and free from an excess of soft, thin elongated, laminated or disintegrated pieces.
3. Gradation shall be as follows:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieve
.75 in	100
No. 4	40 - 50
No. 50	5 - 15
No. 200	3 – 10

4. Sampling and testing shall be in accordance with the following standard AASHTO methods:

Sieve Analysis	T27
Passing 75 um	T11

B. Gravel Borrow

1. Granular material well graded from fine to coarse with a maximum size of 3 inches, obtained from approved natural deposits and unprocessed except for the removal of unacceptable material and stones larger than the maximum size permitted.
2. Gravel shall not contain vegetation, masses of roots, or individual roots more than 18 inches long or more than 1/2 inches in diameter.
3. Gravel shall be substantially free from loam and other organic matter, clay and other fine or harmful substances.
4. Shall be in accordance with the State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.

2.02 SOURCE QUALITY CONTROL

A. Test, Inspection

1. Engineer may elect to sample material supplied at the source.
2. Assist the Engineer and/or personnel from the designated testing laboratory in obtaining samples.

PART 3 EXECUTION

3.01 INSTALLATION

A. Dense Graded Gravel

1. Spread in layers of uniform thickness not greater than 2 inches.
2. Compact thoroughly by means of a suitable vibrator or mechanical tamper.

B. Gravel Borrow

1. Spread in layers of uniform thickness not exceeding 6 inches before compaction and moistened or allowed to dry as directed.
2. Compact thoroughly by means of suitable power-driven tampers or other power-driven equipment.
3. Compaction shall conform to 95% of minimum dry density per ASTM D1557.
4. The percolation rate for the compacted gravel borrow shall not exceed 5 minutes per inch.

3.02 FIELD QUALITY CONTROL

A. Site Tests

1. In accordance with SECTION 01400.

END OF SECTION

SECTION 02248 – TRENCH EXCAVATION

PART 1 – RIGHTS-OF-WAYS

All work shall be in accordance State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda. The Contractor shall maintain clear passage along all rights-of way affected by the construction. No permanent rights-of-way shall be closed without prior written approval of the civil authorities. Improved streets, roads, driveways and sidewalks shall be kept open over or around trenches and excavations and the use of these rendered safe for public use, as required by OSHA. All equipment and materials impinging on rights-of-way shall be clearly marked by barricades and flashing yellow lanterns from dusk to dawn. No excavation in the public right-of-way shall be left open overnight.

END OF SECTION

SECTION 02270 – EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and General Provisions of Contract, including General Conditions, Division 1 Specification Sections, and Division 2, Section 02100 and 02105 apply to work of this section.

B. State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.

1.2 DESCRIPTION OF WORK

A. Furnish and install temporary soil erosion and sedimentation control measures as indicated on the plans, as needed during the progress of the work or as ordered by the Owner's Representative during the life of the contract to control erosion and sedimentation, through use of straw wattles, mulches, grasses, hay bale check dams, netting, fiber mats, silt fences, baled hay, compost filter sock and other erosion control devices and methods.

B. The Contractor shall be prepared at the pre-construction meeting to discuss, in detail, his intended construction sequence and proposed implementation of soil erosion and sedimentation control measures.

C. The Contractor shall be responsible for compliance with the Permit-By-Rule requirements that regulate the Work.

D. The Contractor shall be responsible for compliance with the rules and regulations governing the enforcement of the Maine Natural Resources Protection Act, as applicable.

1.3 SUBMITTALS

A. Submittals listing proposed materials including manufacturer's product data and test reports verifying conformance with design guidelines shall also be provided.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Mulches: Mulches may be hay, straw, fiber mats, netting, wood cellulose, corn or tobacco stalks, bark, corncobs, wood chips, stump grindings or other suitable material and shall be reasonably clean and free of noxious weeds and deleterious materials.

B. Straw Wattles & Silt Fence: By E.J. Prescott 32 Prescott Street, Libby Hill Business Park, Gardiner, Maine 04345. Tel. 207.582.1851, or an approved equal.

C.

D. Baled Hay/Straw Erosion Check: The baled hay or straw shall be approximately 36"x 18"x 24".

E. Grass: Grass shall be a quick growing species suitable to the area providing a temporary cover, which will not later compete with the grasses sown later for permanent cover.

F. Fertilizer and Soil Conditioners: Standard commercial grade as reviewed by the Engineer.

G. Stone: Not applicable.

H. Hay and Straw: Hay and straw for mulch shall be mowings of acceptable herbaceous growth reasonably free from noxious weeds or woody stems and shall be reasonably dry. No salt hay shall be used. This mulch shall be used to stabilize sloped areas and assist in maintaining soil temperature during seed germination. Straw or hay mulch must be anchored immediately after spreading to prevent blowing. The following methods of anchoring straw or hay may be used:

1. Mulch Anchoring Tool: A tractor-drawn implement designed to punch mulch into the soil surface, limited to use on slopes no steeper than 3' horizontally to 1' vertically. Machinery shall be operated on the contour.

2. Mulch Netting: Install in accordance with manufacturer's recommendations.

3. Liquid Mulch Binders: Application of liquid mulch binders and tackifiers should be heaviest at edges of areas and at crests of ridges and banks to prevent wind blowing. Mulch binders should be applied uniformly. Binders may be applied after mulch is spread or may be sprayed into the mulch uniformly as it is being blown onto the soil. Applying straw and binder together is the most effective method.

4. Chemical binders such as petroset, terratack, hydro mulch and aero-spray may be used as recommended by the manufacturer to anchor mulch.

I. Compost Filter Sock:

1. Machine produced.

2. Straw filled tubes of compacted straw of rice, wheat or barley.

3. Compost filter sock to be certified as weed free.

4. Netting for tubes to be seamless, high density polyethylene with ultra violet inhibitors.

5. Roll length to be 10.0 feet to 25.0 feet.

6. Weight per linear foot,
   12-inch: 2.5 lbs. minimum
   9-inch: 1.5 lbs. minimum

7. Stakes shall be wooden, 1 1/8-inch x 1 1/8-inch x 2.5 feet long, with lower ends tapered to facilitate driving into compacted soil. Rebar may be substituted for wooden stakes

J. Inlet Sediment Control Device: The inlet protection sack shall be manufactured for a 2 foot x 2 foot opening under regular flow conditions or approved equal. The filter material shall be installed in accordance with the construction detail as shown on the plans.

Inlet protection sacks shall be manufactured by:

- Atlantic Construction Fabrics, Inc. 1801-A Willis Road, Richmond, VA 23237
- ESS Brothers 23230 West Thomess Blvd.,Loretto, MN 55357
- Bowhead Manufacturing Company PO Box 80327, Seattle, WA 98108
- or an approved equivalent.

PART 3 - EXECUTION

3.1 PREPARATION

A. The Owner's Representative has the authority to limit the surface area of erodible earth material exposed by clearing and grubbing, the surface area of erodible earth material exposed by excavation, borrow and fill operations and to direct the Contractor to provide immediate permanent or temporary pollution control measures to prevent contamination of adjacent streams or other water courses, lakes, ponds or other areas of water impoundment. Such work may involve the use of temporary mulches, mats, seeding, check dams or other control devices or methods as necessary to control erosion. Cut slopes shall be seeded and mulched as the excavation proceeds, to the extent considered desirable and practicable.

B. The Contractor will be required to incorporate all permanent erosion control features into the project at the earliest practicable time. Soil erosion and sedimentation control measures will be used to correct conditions that develop during construction, that were not foreseen during the design stage, that are needed prior to installation of permanent pollution control features, or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project, at no additional cost to the Owner.

C. Where erosion has been identified during the pre-construction meeting, or has been identified during construction as being a problem, clearing and grubbing operations should be so scheduled and performed that grading operations and permanent erosion control features can follow immediately thereafter if the project conditions permit; otherwise temporary erosion control measures may be required between successive construction stages. Under no conditions shall the surface area of erodible earth material exposed at one time, by stripping of topsoil, exceed five (5) acres without review by the Engineer.

D. Contractor shall have on-site all necessary compost filter sock, hay bales, silt fence, rip-rap, and storm drainage piping etc., prior to undertaking any work that may cause erosion.

E. The Owner's Representative will limit the area of excavation, borrow and embankment operations in progress commensurate with the Contractor's capability and progress in keeping the finish grading, mulching, seeding, and other such permanent pollution control measures current. Should seasonal limitations make such coordination unrealistic, temporary erosion control measures shall be taken immediately to the extent feasible, justified and indicated on plans at no additional costs to Owner.

F. If overland water flow becomes a problem in the construction progress then the Contractor shall take it upon himself to construct any and all ditches, temporary roads, fills and pipe culverts as necessary to alleviate a water problem that may affect progress of work. This work shall be performed at no additional expense to the Owner.

G. Under no circumstances shall the amount of surface area of erodible earth material exposed at one time by excavation, borrow or fill within the right-of-way exceed one(1) acres without prior review by the Owner's Representative.

H. The Owner's Representative may elect to increase or decrease the amount of surface area of erodible earth material to be exposed at one time by clearing and grubbing, excavation, borrow and fill operations as determined by his analysis of project conditions.

F. In the event of conflict between these requirements and pollution control laws, rules and regulations of the federal, state or local agencies, the more restrictive laws, rules, or regulations shall apply.

G. Excelsior Blanket

1. Contractor shall furnish, place, secure and maintain excelsior blanket over seeded areas indicated on the plans or directed by the Engineer. The area to be covered shall be properly prepared, fertilized and seeded before the blanket is applied. When the blanket is unrolled, the netting shall be on top and the fibers shall be in contact with the soil over the entire area. In ditches, the blankets shall be applied in the direction of the flow of water, butted snugly at ends and sides, and then stapled. On slopes, the blankets shall be applied either horizontally or vertically to the slope. Ends and sides shall be butted snugly and stapled

2. The blanket shall be held in place by means of staples driven vertically into the soil. Staples shall be spaced approximately two lineal yards apart, on each side, and one row in the center alternately spaced between each side (60 staples for each blanket). Use a common row of staples on adjoining blankets. In areas of high water velocity, as determined by the Engineer, staples shall be installed on two-foot centers.

3. The Contractor shall maintain the excelsior-blanketed areas until all work on the entire contract has been completed and accepted. Maintenance shall consist of the repair of areas damaged by erosion, wind, fire or other causes. Such areas shall be repaired to re-establish the condition and grade of the soil prior to application of replacement matting and shall be re-fertilized and reseeded as specified.

K. Straw Wattles and Silt Fence:

1. Unless directed otherwise, Straw Wattles and or, Silt Fences shall be placed as specified on plans or as otherwise directed

2. Installation shall be per manufacturer's instructions and as shown on plans.

3.2 INSTALLATION LOCATION OF BALED HAY/STRAW AND SILT FENCES

A. During the construction phase, baled hay will be placed and maintained around all catch basins, unless indicated otherwise. Silt fences will be installed prior to clearing and grubbing. Silt and debris will be removed from catch basins and base of silt fences at end of construction.

B. Methods of placing hay bales for erosion control shall conform to the requirements of Section 656 of the MDOT Standard Specifications.

3.3 CONSTRUCTION ENTRANCES

A. A stabilized construction entrance shall be installed at all points of access to reduce or eliminate tracking or flowing of sediment onto the adjacent roads, driveways or other areas, in accordance with the following criteria:

1. Provide 1 to 2-1/2 inch crushed stone, min. 6" thick.

2. Construction entrance shall be as wide as or wider than all points of ingress and egress.

3.4 TEMPORARY SEEDING

A. Hydro-seeding may be applied to stabilize the soils and reduce sediment losses. Mulch anchoring may also be applied as needed or as directed by the Owner's Representative.

1. Temporary cover by hydro-seeding application shall conform to the following:

Coverage Material	Quantity per 1000 sq.ft
Wood fiber mulch	27-1/2 lbs.
Seed	4 lbs.
Annual Ryegrass	1/2 lb.
10-6-4 Fertilizer	22 lbs.
Water	69 gal.

2. Wood fiber mulch and seed etc., shall conform to the applicable subsections of MDOT Department of Transportation Standard Specifications, Section 717.

3. Permanent cover by hydro-seeding application shall conform as specified by the Owner's Representative

4. All exposed soil areas to be planted shall be hydro-seeded (with temporary or permanent cover) within 48 hours after achieving final grade.

5. Seeding made on critical areas exceeding 2 on 1 slopes shall be anchored if necessary, with mulch netting such as jute, paper, plastic and cotton nettings.

6. Areas to remain exposed at times other than optimum seeding dates shall be stabilized with any of the following:

a. Straw, 1 to 2 tons/acre or 70 to 90 lbs./1000 sq. ft. (no Canada thistle, Johnsongrass and quackgrass allowed).

b. Wood-fiber or paper-fiber, 1500 lbs./acre or 35 lbs./1000 sq. ft. (use limited to less than 3 percent and less than 150 foot length of slope, and during spring and fall.

c. Mulch netting such as jute, paper, plastic and cotton nettings may be used where erosion is less severe.

d. Wood chips 6 tons/acre or 275-lbs./1000 sq. ft.

3.5 SPECIAL INSTRUCTIONS

A. Soil erosion and sedimentation control measures shall be inspected during storm events, after each rainfall of one-inch magnitude or greater, prior to weekends, and prior to any forecasted storm events. The Contractor shall submit weekly inspection reports to the Owner’s Representative.

B. Damage to soil erosion and sedimentation control measures shall be repaired immediately upon discovery and not more than 4 hours from time of observed damage.

C. Inlet protection devices shall remain in place until the pavement overlay or top course is placed and/or graded non-impervious areas have become permanently stabilized by adequate vegetative growth, at which point all inlet protection device materials shall become the property of the Contractor, and shall be removed from the site. The Contractor shall inspect the condition of inlet protection devices after each rainstorm and during major rain events, and all shall be cleaned periodically as required to remove accumulated debris and maintain the function of the inlets. Inlet protection devices that become damaged during construction operations shall be repaired or replaced immediately, at no additional cost to the Owner.

D. In the event that additional temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled, or if ordered to do so by the Owner’s Representative, said work shall be performed by the Contractor at his own expense.

E. It is also the Contractor's responsibility to maintain the placement of hay/straw bales and silt fences, remove silt from ditches and to repair any erosion of ditches and slopes.

F. In case of repeated failures on the part of the Contractor to control erosion, pollution, and/or siltation, the Owner reserves the right to employ outside assistance or to use his own forces to provide the necessary corrective measures. Such incurred direct cost plus project engineering costs shall be charged to the Contractor, and appropriate deductions made from the Contractor's monthly progress payment.

G. Any erosion, siltation or general damage resulting from neglect by the Contractor to undertake temporary and permanent erosion control measures as required or directed shall result in the responsibility of the Contractor to correct the areas as determined by Owner’s Representative.

H. Temporary pollution controls may be required outside the defined project limits, where such work is necessary because of project-related utility installations, equipment or material storage sites or other work by the Contractor not within the defined project area.

I. The erosion control features shall be maintained by the Contractor.

END OF SECTION

SECTION 02530 – EXPOSED AGGREGATE SIDEWALKS

PART 1 GENERAL

1.01 SUMMARY

A. The work of this Section consists of providing all labor, equipment, materials, incidental work, and construction methods necessary to purchase, deliver, and install exposed aggregate concrete indicated on the plans. The surfaces consist of the following:

1.02 REFERENCES

A. The State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.

B. American Concrete Institute (ACI):

1. 306R Cold Weather Concreting
2. 316R Recommendations for Construction of Concrete Pavements and concrete bases

1.03 SUBMITTALS

A. Construct Exposed Aggregate Concrete Sample Panel.

1. Construct a 6 foot x 6 foot Exposed Aggregate Concrete sample panel of finished six (6) inch thick concrete pavement, for review and approval, at least 15 days prior to final concrete paving work. Samples shall be constructed within the area of proposed finish work. The samples shall demonstrate the typical installation of concrete, including score lines, expansion joint, any sealant, curing and finishing material, surface texture, color, and edge treatment. The accepted sample, upon approval, shall be maintained as the standard of minimal quality for approval of all proposed concrete pavement work required for the project. Unacceptable sample panels shall immediately be removed from the site at the Contractor's expense. New sample panels shall be constructed until approval is obtained.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Concrete and Expansion Joints shall be in accordance with the State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.

B. Retarder shall be one of the following products or approved equals.

1. The Burke Company: "True Etch Surface Retarder".
2. Anti-hysro: "Spec No. 8-8A – Concrete Surface Retarder".
3. Sika Corp. "Rugasol-S".

C. Surface sealer shall be THORO® ENVIROSEAL 20 (Also internationally known as Masterseal 303) or approved equal. The Contractor must follow the manufacturer's product recommendations. THORO® ENVIROSEAL 20 shall be stored under cover, clear of the ground and stacked not more than 2 containers high and shall be protected from freezing.

D. Detectable Warning Panel shall be in accordance with Section 942 of the State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.

PART 3 – EXECUTION

3.01 GENERAL

A. All surfaces shall be stable, firm, and slip resistant. Construct walkway so that water does not accumulate on any surfaces.

B. Exposed Aggregate Concrete work shall be done only after excavation and construction work which might damage them has been completed. Damage caused during construction shall be repaired before acceptance at no expense to the Owner.

3.02 SPECIFIC

A. Exposed Aggregate Concrete, Expansion Joints, Base, and Detectable Warning Panel shall be installed in accordance to the applicable parts of Section 501 of the State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.

B. All expansion and control joints shall be placed as shown on the plans. Control joints shall be saw cut.

C. Exposed Aggregate Concrete: The method employed to achieve the desired results shall be in applying a chemical concrete set retarder admixture to the surface of the concrete in accordance with the manufactures directions. The amount of retardant applied will be sufficient to expose 1/8 inch of the coarse aggregate using a water spray and provide an overall surface with a rough texture. Use care to monitor the initial power-washing and 'release' process and then repeat the process for subsequent pours to maintain a consistent appearance. All adjacent work shall be protected from over-spray and splatter. The Contractor shall clean all over-sprayed and splattered surfaces to the satisfaction of the Owner's Representative.

D. Sealer Application: Surface, air, and material temperature shall be as directed by the manufacture during application. Surfaces to be treated shall be dry. All adjacent work shall be protected from over-spray of this product. Apply sealer in accordance with the manufacturer's directions. Test a small area of the concrete surface before starting general application of any clear, penetrating sealer to assure desired results and coverage rates. The Contractor shall clean all over-sprayed surfaces to the satisfaction of the Owner's Representative.

3.03 PROTECTION OF CONCRETE SURFACES

A. Concrete surfaces shall be protected from damage until surface has hardened sufficiently. If necessary 1/2 inches, thick plywood sheets shall be used to protect the exposed surface.

B. The Contractor shall provide adequate surveillance for all poured-in-place concrete pavements until concrete has set firmly, to prevent unwarranted markings of the concrete surface. Any unauthorized marking or graffiti in the finished surfaces shall be a cause for rejection by the Owner and replacement by the Contractor at no additional cost.

END OF SECTION

SECTION 02610 – CURBING

PART 1 GENERAL

1.01 WORK INCLUDED

A. This item of work includes the furnishing, handling, and setting curbing as indicated on the Drawings and as specified herein.

1.02 RELATED WORK

A. Section 02200 – Earth Excavation, Backfilling and Grading.

1.03 SUBMITTALS

A. Submit sample of granite curb to Owner's Representative for approval. Sample shall be representative of the curb units in finish, texture, and range of color. Sample size shall be 12 inches long by 6 inches wide, minimum. Submit name of stone quarry supplying granite curb for approval by the Owner's Representative.

B. Submit complete shop drawings of stone curb for Owner's Representative's approval

1. Shop drawings shall indicate size, dimension, and finish of each curb type
2. Submit a complete schedule for quantity, lengths, and size for all curb on the project.

1.04 QUALITY ASSURANCE

A. Stone for all curb shall be supplied from a single source for entire project.

PART 2 PRODUCTS

2.01 CURBING

A. CURBING: Curbing shall be granite and shall be in accordance with the State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.

B. Curbing top shall be thermal finish.

PART 3 EXECUTION

3.01 SETTING CURB

A. Verify all subgrades. Identify all angle points and changes in grade prior to starting installation. Set curbing on well compacted gravel base to the line and grades indicated on the plans.

B. Set curb in accordance with the State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.

END OF SECTION

SECTION 02810 – LANDSCAPE BOULDERS

PART 1 – GENERAL

1.01 SUMMARY

A. Work under this Section includes

1. Furnishing, hauling, and installing weathered naturally occurring boulders as indicated on the Drawings and specified herein.

1.02 SUBMITTALS

A. Submit photographs of proposed boulders for use on this project for review. If requested, facilitate the Owner's Representative reviewing the boulders in person.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Boulders: Naturally occurring indigenous weathered boulders, irregular in shape and size, sound in composition, naturally weathered, light brown to medium brown, irregular in shape and sized as indicated on the plans. Size range is 48" to 66" in length, 26" to 42 in width, and 32" to 42" in height. Boulders not meeting the above criteria may be rejected unless approved by the Owner's Representative.

B. Crushed Stone: ¾" crushed stone for bedding of boulders.

PART 3 – EXECUTION

3.01 DELIVERY, STORAGE AND HANDLING

A. All materials for the work of this section shall be delivered, stored, and handled to prevent damage. Coordinate delivery of boulders early in the project to prevent delays and allow for efficient placement of surrounding materials.

3.02 PROJECT CONDITIONS

A. The Contractor shall verify all grades prior to start of work and make any modifications prior to placement of the Boulders.

B. The Contractor shall protect adjacent work from damage, soiling, and staining during installation operation.

3.03 INSTALLATION

A. Boulders shall be placed in a manner similar to a natural appearance and positioned with a varied (plus or minus 6") exposure as shown on the plans. The height of the boulders shall also vary (plus or minus 3") between stones.

B. Position boulders to retain the slope as shown on the plans.

C. Boulders shall be set on a 8” crushed stone bed, installed over the compacted subgrade. Boulders shall be embedded approximately 1/4 to 1/3 of their overall height below grade, depth as determined by the desired final exposed face of each stone.

END OF SECTION

SECTION 02815 – STONE BOLLARD

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes

1. Requirements for furnishing and placing Stone Bollard.
2. Location of specified Stone Bollard as detailed on the Drawings or as directed by the Owner's Representative.

B. Related Sections

1. Section 02200 - Earth Excavation, Backfill, Fill and Grading.

1.02 REFERENCES

A. National Building Granite Quarries Association, Inc (NBGQA) specifications for Architectural Granite.

B. State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.

C. The applicable sections of the American Society for Testing and Materials (ASTM).

1.03 SUBMITTALS

A. Shop Drawings

1. Show dimensions and details of Stone Bollard. Verify dimensions and coordinate with adjacent work items. Obtain approvals of shop drawings before fabrication.

B. Samples

1. Submit sample of granite for Stone Bollard that indicates the finish specified. Sample shall be 12 inches square by 2 inches thick. Submit name of quarry suppling granite.

1.04 QUALITY ASSURANCE

A. Qualifications

1. A firm experienced in fabricating granite and with a record of successful in-service performance, as well as sufficient production capacity to manufacture required units

B. Source

1. Obtain all granite from single source.

PART 2 PRODUCTS

2.01 MATERIALS

A. Stone Bollard

1. Shall be in accordance with the State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.
2. Clean, hard, and durable particles or fragments, free from dirt, vegetation, or other objectionable matter, and free from an excess of soft, thin elongated, laminated or disintegrated pieces.

B. Gravel Borrow

1. Granular material well graded from fine to coarse with a maximum size of 3 inches, obtained from approved natural deposits and unprocessed except for the removal of unacceptable material and stones larger than the maximum size permitted.
2. Gravel shall not contain vegetation, masses of roots, or individual roots more than 18 inches long or more than 1/2 inches in diameter.
3. Gravel shall be substantially free from loam and other organic matter, clay and other fine or harmful substances.
4. Shall be in accordance with the State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.

2.02 SOURCE QUALITY CONTROL

A. Test, Inspection

1. Engineer may elect to sample material supplied at the source.
2. Assist the Engineer and/or personnel from the designated testing laboratory in obtaining samples.

PART 3 EXECUTION

3.01 INSTALLATION

A. Crushed Stone

1. Spread in layers of uniform thickness not greater than 6 inches.
2. Set thoroughly by means of a suitable vibrator or mechanical tamper.

B. Gravel Borrow

1. Spread in layers of uniform thickness not exceeding 6 inches before compaction and moistened or allowed to dry as directed.

2. Compact thoroughly by means of suitable power-driven tampers or other power-driven equipment.
3. Compaction shall conform to 95% of minimum dry density per ASTM D1557.
4. The percolation rate for the compacted gravel borrow shall not exceed 5 minutes per inch.

3.02 FIELD QUALITY CONTROL

A. Site Tests

1. In accordance with SECTION 01400.

END OF SECTION

SECTION 02930 – LOAMING AND SEEDING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Requirements for loaming, liming, fertilizing, seeding, and related work in areas as shown on the plans and areas disturbed in the process of performing the Work under this contract.

1.02 SUBMITTALS

A. Submit with seed, certificates confirming seed mixture, purity, germinating value, and crop year identification.

B. Submit test results for any loam to be imported to the site. Test shall, at a minimum, include pH, organic matter, and particle size and distribution.

PART 2 PRODUCTS

2.01 LOAM

A. Loam shall be in accordance with the State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda

2.02 LIME, FERTILIZER AND SEED

A. Lime, Fertilizer and Seed shall be in accordance with the State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.

B. Grass seed mix shall be Residential as outlined in the State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda and applied at a rate of 4 lbs per 1,000 SF.

PART 3 EXECUTION

3.01 GENERAL

A. Loam, Fertilizer. Lime, and Seed shall be installed in accordance the State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2004 Edition with latest addenda.

3.02 LOAM

A. Spread on site loam suitable for re-use and imported loam to a 6-inch depth after compaction and fine grading operations.

3.03 LIME AND FERTILIZER

A. Apply lime by mechanical means at rate of 3,000 pounds per acre.

B. Apply fertilizer at rate of 1,200 pounds per acre.

C. Water lawn areas adequately at time of sowing and daily thereafter with fine spray and continue throughout maintenance and protection period.

D. Seed during the optimal late-season window- a period from August 15 to October 1, and only when weather and soil conditions are suitable for such work, unless otherwise permitted.

3.04 MAINTENANCE OF SEEDED AREAS

A. Maintain lawn areas and other seed areas at maximum height of 2-1/2 inches by mowing at least three (3) times. Weed thoroughly once and maintain until time of Final Acceptance.

B. Begin maintenance immediately after each portion of lawn is seeded, and continue until Final Acceptance.

C. If determined necessary, scarify, de-thatch, re-seed with original mixtures and re-fertilize, perform additional watering or implement whatever measures are necessary to establish a close stand of grasses over the entire area of lawn, reasonably free of weeds and undesirable coarse native grasses.

D. Repair or replace all seeded areas that, in judgment of Owner, have not survived and grown in satisfactory manner, for a period of one (1) year after acceptance.

E. For seeding replacement, use same seed mixture as specified, and furnish and install as specified.

3.05 ACCEPTANCE

A. Seeded areas are acceptable once a healthy, uniform, and close stand of grass is established that is free of weeds, and surface irregularities, and with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.

END OF SECTION

SECTION 02950 - PLANTING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. This Work under this Item consists of furnishing new plant material: planting, watering, mulching, staking and guying trees, shrubs, perennials, and ground covers of the type and sizes indicated on the Plans, in accordance with these Specifications and/or as directed by the Owner's Representative.

B. Provide all materials, equipment and labor necessary to complete the work as indicated on the drawings or as specified herein.

C. The principal work of this section includes, but may not be limited to, the following:

1. Layout and Excavation of Plant Holes
2. Planting and Backfilling
3. Watering
4. Pre-emergent Weed Control
5. Mulching
6. Fertilizing
7. Staking and Guying
8. Antidessicant Application
9. Tags and Labels
10. Maintenance
11. Plant Replacement Guarantee

1.02 REFERENCES

A. ANSI Z-60.1 - Nursery Stock, latest edition (American Association of Nurserymen, Inc.).

B. SPN: "Standardized Plant Names," latest edition, by the American Joint Committee on Horticultural Nomenclature.

C. Pruning Standards: ANSI A300 Practices for Trees, Shrubs &Other Woody Plant Maintenance: Secretariat, National Arborist Association, P. O. Box 1094 Amherst, MA.

1.03 QUALITY ASSURANCE

A. The Contractor shall Sub-contract planting work to a firm specializing in such work unless the Contractor is fully experienced and qualified. The Landscape Contractor shall have five years continuous experience and expertise in management, handling and installation of ornamental plant material in large scale landscape construction projects. Site foreman shall have at least five years' experience, be a Rhode Island licensed Arborist and shall be on-site during all times of plant installation.

B. The Landscape Contractor shall be responsible to coordinate with plant material suppliers in sufficient time to ensure that all of the plants as specified in the contract plant list are available in sufficient quantity for installation.

C. An arborist, licensed by the State of Rhode Island, is required for any tree pruning work.

D. At least one tree and one shrub of each variety is to be tagged with a waterproof tag bearing legible designation of botanical and common names, and all other standard products shall be delivered sealed and unbroken.

E. Do not make substitutions without written approval. If specified landscape material is not available, obtain approval for substitution from the Owner's Representative.

F. Where formal planting arrangements and adjacent street trees of the same variety are shown, select stock with uniform height and spread, and label with numbers to assure symmetry in planting.

G. The Owner's Representative reserves the right to inspect all plant materials for compliance with specifications, and to reject unsatisfactory or defective work at any time during progress of work.

1.04 SUBMITTALS

A. Certified analysis and source of off-site loam used to backfill shall be provided. Certification shall list soil additives to topsoil, rates and type.

B. Certifications and/or labels of proposed plant materials or substitutions, listing common and scientific names of each.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Protect all products from weather or other damaging or deteriorating conditions.

B. Plants which have been damaged or have deteriorated in transit or storage are not acceptable.

C. Keep plants moist, fresh, and protected against exposure to sun, wind, and freezing temperatures whether in the receiving yard, in transit, while being handled, or at the job site awaiting planting.

D. Deliver trees, shrubs, perennials, and groundcover after preparations for planting have been completed and plant immediately.

E. Planting Dates: The Landscape Contractor should provide a proposed planting schedule. Schedule dates for each type of landscape work during normal seasons for such work. Once accepted, revise dates only as approved in writing, after documentation of reasons for delays.

Planting Window:	Spring – April 30 to June 30
	Fall - August 15 to October 15

F. Correlate planting schedule with specified maintenance periods to provide maintenance to date of acceptance
.

G. Coordination with Lawns: Plant trees, shrubs, perennials, and groundcover after final grades are established and prior to planting of lawns, unless otherwise acceptable to Owner's Representative. If planting occurs after lawn work, protect lawn areas and promptly repair damage to lawns resulting from planting operations.

1.06 SPECIAL CONDITIONS

A. Should discrepancies exist between plant quantities or plant sizes as shown in the Planting Schedule and on the Planting Plan, quantities and sizes shown on the Planting Plan shall govern. Contractor shall install all plants as shown on the plan at no additional cost to the Owner.

1.07 WARRANTY

A. Provide a warranty for plant material for a minimum of one year including one continuous growing season. Commence warranty on date identified in the Certificate of Final Acceptance.

B. Warranty: Include coverage of plants from death or unhealthy conditions as determined by the Owner's Representative.

C. Replacements: Plants of same size and species as specified, planted as soon as possible in the next growing season, with a new warranty and an extended maintenance service commencing on date of replacement.

1.08 MAINTENANCE

A. Maintenance of all plant material to be performed by installer includes:

1. Watering, weeding, cultivating and mulching
2. Tightening, guy webbing and repairing of stakes
3. Replacing of dead material
4. Resetting plants to proper grades, or to upright position
5.

PART 2 - MATERIALS

2.01 BACKFILL MIX:

A. Backfill Mix shall be “fine sandy loam” or “sandy loam” determined by mechanical analysis (ASTM D-422) and based on the “USDA Classification System”. Loam shall have the following mechanical analysis:

Textural Class	% of Total Weight	Avg%
Sand (0.05 – 2.0 mm dia. Range)	45 – 75	60
Silt (0.002-0.05 mm dia. Range)	20 – 40	30
Clay (less than 0.002 mm dia. Range)	5 – 15	10

2.02 LOAM:

A. Loam shall contain not less than 5 1/2 percent nor more than 10 percent organic matter as determined by the loss on ignition of oven-dried samples. The loam shall have an acidity range of 5.5 pH to 7.6 pH.

B. Loam shall be free of debris and other extraneous matter. It shall be uncontaminated by salt water, foreign matter and substances harmful to plant growth. The electrical conductivity (EC2) of a 1:2 soil-water suspension shall be equal to or less than 1.0 milliohms/cm. (Test minus sieve #10 material). Soils shall not have levels of extractable aluminum greater than 200 parts per million.

C. No loam shall be delivered to the site until the review and approval of loam test results by the Owner’s Representative, but such approval shall not constitute final acceptance. The Owner’s Representative will reject any material delivered to the site which, after on-site, post-delivery testing, does not meet these specifications.

2.03 ANTIDESSICANT

A. Anti-desiccant shall be an emulsion which permits transpiration while retarding excessive loss of moisture from plants.

B. Deliver in manufacturer's fully identified containers and mix according to manufacturer's direction. Use "Wiltproof" or approved equal.

2.04 TREE AND SHRUB FERTILIZER:

A. Complete fertilizer in granular form, from commercial sources bearing manufacturer’s analysis; 10-10-10 ratio of N-P-K.

B. Significant quantities of trace elements such as iron, boron, etc. shall be contained in the fertilizer.

C. Fifty percent (50%) of available nitrogen shall be in a slow release form as found in certain urea form products or natural organic forms or a combination of both.

D. Salt index shall not exceed 35.

2.05 STAKING AND GUYING MATERIALS:

A. Guy Web: Shall be low abrasion woven fiber webbing with break strength of 900 lbs. or better. The width of the webbing shall be no less than 5/8 inch, nor greater than ¾ inch. The length shall be sufficient enough to be attached to the tree trunk and stake.

B. Stakes: Shall be on a hardwood source, free of knots, insects and fungi. Stakes shall be of uniform size and shape and shall be a minimum of 2 inches by 3 inches by 8 feet. Stakes shall be pointed with a taper of no less than 4 inches.

C. The above ground stake height shall be 8 inches above the point of attachment. The type of stakes shall be uniform throughout the job.

2.06 PRE-EMERGENT WEED CONTROL:

A. Pre-Emergent weed control for application in mulch areas shall be granular and have the active ingredient "Trifluralin 5.0%". All application rates and product use shall be in accordance with manufactures guidelines.

2.07 MULCH:

A. Pine Bark Mulch shall be derived from evergreen tree bark aged to a minimum of six months and no more than eighteen months. The bark shall be shredded so that the resulting pieces are no more than 1/2 inch thick and no longer than 3 inches. The mulch shall be ninety-eight percent (98%) organic matter with a pH of 3.5 to 4.5. The mulch shall be free of stringy material and shall not contain an excess of fine particles. The mulch shall be brown in color, free of leaves, twigs, sod, weeds, shavings and other foreign materials which are injurious to health plant growth.

2.08 WATER:

A. Clean, fresh potable water free from injurious chemicals and other toxic substances harmful to plant life. No brackish water will be permitted.

B. The Owner's Representative may reject any water delivered to the site which, after on-site, post-delivery testing, does not meet these specifications.

2.09 PLANT MATERIALS:

A. Plant materials shall conform in size, grade and quality to the "American Association of Nurserymen Standards for Nursery Stock." As approved by the United States of America standards institute, in effect at the time of bidding.

B. Plants of other kinds than those named in the Plant Schedule on the Drawings shall not be accepted without written approval of the Owner's Representative.

C. Unless otherwise approved by Owner's Representative, all plants shall be nursery-grown in accordance with good horticultural practices and shall have been grown under climatic conditions similar to those in the locality of the project for at least two years. They shall have been transplanted or root pruned at least nine months previous to moving to the site.

D. Plants shall be dug, handled and transported so as to prevent damage of any sort including but not limited to breakage of branches or limbs, scraped or bruised trunk or broken rootball. Plants shall be protected from desiccation during digging, storage and transportation by watering, covering and application of anti-desiccants as necessary to ensure their continued health and viability.

E. All plant material shall comply with the state and federal law with respect to inspection for plant disease and insect infestation.

F. Replacement plants larger in size than existing may be used if approved by the Owner's Representative provided use of larger plants does not increase Contract price.

G. If use of larger plants is approved, increase ball of earth of spread of roots in proportion to size of plant.

PART 3 - EXECUTION

3.01 Planting: The Landscape Contractor shall work with the Owner's Representative to determine which plants in the hedgerow are most suitable for transplanting and how best to coordinate and stage the operations to minimize the risk to the plants health. The plants identified to be transplanted shall be root pruned at the start of the Contract, to ease transplanting operations and minimize plant stress later in the fall.

A. Layout: Determine location of underground utilities and layout plants so as to avoid possible damage to such structures. Plant pits and bed locations as shown graphically and/or verbally on plans, shall be staked on ground by contractor and approved by the Owner's Representative prior to excavation. Should discrepancies exist between plant quantities in Planting Schedule and Planting Plan, quantities shown on the Planting Plan shall govern. Adjustments in locations and outline shall be made as directed in field. Labor, equipment, and new smooth stakes are to be furnished by the Contractor for this purpose.

B. Excavation: Planting beds and pits shall conform to the approved staked locations and outlines. Holes dug for plantings shall in all cases be large enough to include the complete root system of the plant (tree, shrub, and groundcover) to be received and also sufficient amounts of approved backfill around the periphery of the root ball. All sod, weeds, roots, cobbles, and stones and other objectionable materials excavated from the plant holes, which is unsuitable for backfill shall be removed from the site immediately and legally disposed of.

C. Plant Hole Size: The minimum plant hole size, unless otherwise specified, shown on the plans or directed by the Owner's Representative shall be as follows:

1. Trees and Shrubs - The planting hole shall be twice the diameter of the root ball in width and no deeper than 2 inches less than the distance from the bottom of the root ball to the root collar (i.e. a 12 inch tall ball will require a 10 inch deep hole). Any excavation in excess of that required shall be replaced and compacted to eighty-five percent (85%) of maximum density.

2. Perennials and Groundcover - The planting hole shall be twice the diameter of the root ball in width and equal to the depth from the bottom of the root ball to the level at which it was grown in the nursery. Any excavation in excess of that required shall be replaced and compacted to eighty-five percent (85%) of maximum density.

3.

D. Any rocks or underground obstructions shall be removed to a depth necessary for planting as specified, unless alternate locations for the planting are approved by the Owner's Representative. If removal of obstructions results in a deeper hole than specified for planting, backfill material shall be added and compacted to eighty-five percent (85%) of maximum density to the correct depth.

E. Backfill Mix: Add loam to suitable soil excavated from the planting hole to create mix for planting pits. Backfill mix shall be at least thirty-three percent (33%) loam.

3.03 SETTING PLANTS

A. Plants shall be handled in such a manner that the soil of the root ball will not be loosened from the roots. Carefully place plant into the prepared hole. Set plants plumb and fill in around the root ball to one-half the depth of the hole with backfill mix. Thoroughly tamp the backfill mix to eighty-five percent (85%) of maximum density.

B. Fill remaining area of planting hole with water. Once the water has completely drained loosen burlap and peel down at least the top one-third. If required wire baskets to be cut off and removed. Roots that have been wrapped around the ball within the burlap shall be made to lay in as natural a manner as possible. Cut broken or frayed roots cleanly.

C. Fill remaining area of hole with backfill mix and thoroughly tamp to eighty-five percent (85%) of maximum density. Form a saucer around the edge of through backfill hole by constructing a berm. The finish height of the compacted berm shall be 4 inches higher than the surrounding grade. No excess soil shall be allowed to remain within the plant saucer. Fill saucer with water.

3.04 PRUNING OF NEW PLANT MATERIAL

A. After planting, prune only dead, broken or deformed branches and in such manner as to preserve natural character of plant.

B. Perform all pruning with sharp tools, with cuts flush and clean. Do not apply paint or asphalt emulsion tree wound compound on cut area.

C. Trees which have had their leaders cut, or so damaged that cutting is necessary, will not be accepted. There shall be no abrasion of bark, nor fresh cuts of limbs over ½ inch.

3.05 WATERING

A. The plants shall be watered immediately following planting.

B. Soak the plants thoroughly again within a twenty-four hour period after the initial planting.

C. Additional watering shall be made at least once every three days, or as directed by the Owner's Representative based on weather conditions, until final acceptance of the plant material.

3.06 FERTILIZING

A. During backfill operations, place fertilizer in upper foot of back fill around perimeters at a rate of two ounces per foot of diameter of plant pit, or as recommended by manufacturer.

3.07 MULCHING PLANTS

A. Application of mulch should only occur after planting operations have been completed and initial watering has taken place. Mulch shall be applied no later than forty-eight hours after planting.

B. Prior to the placement of mulch, the contractor shall apply a pre-emergent weed control with the entire area to be mulched. Pre-emergent weed control shall be applied by a commercial applicator, licensed by the State of Massachusetts at a rate in accordance with the manufacturer's instructions.

C. Mulch shall be applied a minimum of 2 inches in depth for all individual trees and planting beds, as indicated graphically or verbally on the drawings.

D. Where mulch abuts seeded lawn areas or other finish grade materials, edge of planting bed shall be cut smooth and cleanly. Mulch shall be placed carefully so as not to spill into adjacent areas. Any excess or spilled mulch shall be promptly removed from the project area. The cost of the mulch is incidental to new plantings.

3.08 GUYING AND STAKING

A. Immediately after planting, stake trees as indicated on the drawings or as directed by Owner's Representative.

B. Place two stakes outside of the planting pit exercising care not to damage the soil berm.

C. Guy all trees with a caliper of 2 inches or greater and all evergreen trees greater than 4 feet. Guy webbing shall be attached at a point no higher than one half the height of the tree or lower than one-third the height of the tree.

D. Guy trees to each stake near top of stake and intertwine webbing at tree trunk. The guy webbing shall lay flat against the trunk. Draw guy webbing tight enough to remove slack but shall not cause deflation or strain to the plant.

3.09 TRUNK WRAPPING

A. Remove all trunk wrap and trunk protection devices prior to staking and guying operations unless otherwise directed by the Owner's Representative.

3.10 ANTIDESSICANT SPRAYING

A. Spray anti-desiccants as directed by the manufacturer's recommendation and as approved by the Owner's Representative.

3.11 TAGS AND LABELS

A. Leave all tree tag and label seals unbroken and visible on plant material until final inspection. Remove all seals immediately after final inspection.

3.12 MAINTENANCE

A. Contractor is responsible for protection and maintenance of all work prior to final acceptance. No plants will be accepted unless they show a healthy growth and satisfactory condition.

B. Maintenance work for all plantings shall be as listed in Section 1.08.

3.13 PLANT REPLACEMENT GUARANTEE

A. Guarantee that, upon completion and final acceptance tree, shrub and groundcover planting conforms to requirements of contract documents and that all plants except transplant materials are healthy and will remain so for a period of one year. Such period shall commence with date of final acceptance.

B. At any time within period of guarantee, Contractor shall replace any planting which for any reason, other than vandalism, has died or is in a dying condition, or which has failed to flourish in such a manner or to such a degree that its usefulness or appearance has been impaired.

C. The Owner's Representative will not maintain plantings until after guarantee period. Contractor shall not have any claim that materials have failed to flourish as a result of Owner's maintenance operations, or lack of maintenance, and shall abide by terms stated herein for guarantee and replacement of plant materials.

D. Decision of Owner's Representative as to necessity to replace any plant materials or repair any defects on workmanship, or cause of any destruction or loss, impairment or failure to flourish, shall be conclusive and binding upon Contractor. Replacements shall be of same species and size as specified on Plant List. All plant replacements shall be inspected, sealed, furnished, planted and mulched as specified herein at Contractor's expense.

E. "Vandalism," is intended to mean any acts, whether intentional or accidental, by other persons occurring following final acceptance, which clearly result in breakage or other damage to individual plants or plant beds, and which may reasonable be considered to be beyond Contractor's reasonable control, as determined by the Owner's Representative.

END OF SECTION