

CITY OF CONCORD



REQUEST FOR QUALIFICATIONS

**EMERGENCY & RAPID RESPONSE
ENVIRONMENTAL SERVICES**

Project #2013-004

February 2013

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I. OVERVIEW AND PURPOSE

The City of Concord is soliciting proposals from qualified Contractors to provide emergency response environmental services for various Departments of the City.

A rotation call list will be utilized in the event of incidents involving, but not limited to, City projects, City facilities, City vehicles and/or City equipment. It is not the intention that this rotation list be used where private citizens and/or private entities are involved in incidents within the City limits even when the City's Fire/Emergency Management officials respond. The City of Concord, however, reserves the right to utilize the rotation list as deemed necessary by Emergency Management officials in cases where the responsible party cannot or is unable to be identified or to procure their own services for necessary or required cleanup operations. In these cases, this rotation list and Contract Agreement shall be utilized.

Selected Contractors will be placed on a rotation call list in alphabetical order by the company name. Each company shall be contacted in order according to the list when an incident occurs until a Contractor commits that they are able to respond to the incident scene within one (1) hour to include at minimum a reconnaissance team and/or begin remedial action. If the City is unable to confirm such a commitment, the next Contractor on the rotation list shall be contacted. Should a Contractor respond to an incident and perform cleanup operations, when the next incident occurs, the City shall contact the company that is next on the rotation list in order to maintain the rotation sequence.

Qualified Contractors that are selected will enter into a Contract Agreement with the City of Concord and shall be placed on a rotation call list for emergency incidents. Contractors will be selected on the basis of their firm's qualifications. If selected, a fee schedule shall be submitted at the time of contract routing and shall be incorporated at that time into Exhibit A. When submitting a fee schedule at a later date, please include any minimum charges and associated times for labor and equipment. Also, for Contractors who have a valid North Carolina license for the installation of water and sewer utilities (PU) and are interested in performing this type of work in conjunction with remedial/response activities, please include unit pricing for the installation of water and sewer appurtenances into the fee schedule that will be submitted at a later date.

II. SCOPE OF WORK

The following is a general description of the work required. This is not intended to be all-inclusive:

- (1) excavation and/or remediation of environmental contamination encountered during construction of City projects,
- (2) vacuum/pumping services for removal of solid and liquid hazardous and non-hazardous materials from oil/water separators, storm water catch basins, sumps, drains, streams, ponds, etc.,
- (3) UST/AST removal/closures,
- (4) Sampling of soils, groundwater, and/or surface waters for the purpose of confirmation of adequate cleanup according to applicable North Carolina General Statutes, Guidelines established by the North Carolina Department of Environment and Natural Resources (NCDENR), rules set forth by the United States Environmental Protection Agency (USEPA), the United States Department of Transportation (USDOT), and any other applicable federal, State, and local rules and regulations,

(5) to perform these services and conduct business in accordance with the applicable rules set forth by the USEPA, United States Occupational Safety and Health Administration (US OSHA) and the North Carolina Department of Labor (NCDOL),

(6) to provide at least three (3) copies of a written summary report of each spill incident to the City of Concord Engineering Department that includes adequate documentation describing (a) the nature and estimated amount of the spill incident, (b) the location of each incident, (c) soil and/or water sampling documents confirming adequate cleanup, (d) transportation and disposal manifests, and (e) associated sampling for disposal purposes according to the requirements of the appropriate disposal facility, and

(7) For Contractors possessing a valid and current license in the State of North Carolina for the installation of public utilities (PU), scope of work may also include the installation of water and/or wastewater utilities in conjunction with, or in addition to, the above emergency response activities. For this type of work, the attached Exhibit D General Conditions and Exhibit E Supplementary Conditions are applicable and are incorporated as additional Attachments to the Contract.

Estimated Cost of Incident

Upon response to an incident and after there has been the opportunity for initial assessment through reconnaissance by the Contractor, a site-specific scope of work that includes estimated quantities and a total project estimate shall be given to the City as soon as possible for the issuance of an emergency purchase order by the City. Once the specific project estimate is quoted for the project, the Contractor shall not exceed the total quoted amount unless first approved in writing by the City.

Questions concerning the scope of this project should be directed to the Engineering Department at 704.920.5425. Questions regarding request for qualifications and/or selection procedures should also be directed to the Engineering Department.

III. SUBMITTAL REQUIREMENTS

Firms should have no contact related to this project with elected officials or appointed officials during the RFQ process. Any such contact will subject the firm to immediate disqualification for consideration for this Contract. A committee may narrow the applicants and conduct interviews prior to recommending firms.

The selection of the firm will be based on the totality of the circumstances of the qualifications of the firm as presented in the detailed qualifications statement set forth below. The presence or absence of one or more of the items listed below, except for those items required by law, shall not be totally disqualifying but shall be taken into consideration as a portion of the totality of the circumstances reflecting positively or negatively on the qualifications of the firm. Qualification statements should clearly and concisely address the following:

- Firm name and location of office, including project manager and any known subcontractors and/or sub-consultants,
- Experience in emergency response and spill cleanup operations,
- Demonstrate that company personnel meet the training requirements of 29 CFR 1910.120 and be familiar with the Incident Command System,
- Brief overview and history of the firm,
- Experience in performing cleanup operations for publicly funded and/or governmental agencies in North Carolina.

- The project manager, key personnel, and any sub-consultants who will be involved with emergency response and cleanup; their qualifications and experience as related to the scope of work detailed above, as well as their anticipated assignments related to this RFQ, including specific information on their experience with similar projects,
- Other work commitments of the specified key personnel during this project time frame and work capacity of the firm as a whole,
- History of emergency spill response time as related to distance from spill site,
- Estimated spill response time for incidents within the City limits of Concord,
- Client references for related governmental, institutional (hospitals, universities, etc.) or similar private contracts, work done in the past five years, including name, address, telephone number and contact person most involved with the project,
- Historical data on at least three comparable cleanup or spill response projects completed over the past five years showing schedule performance,
- Ability to provide appropriate on-scene cleanup equipment within the specified remedial action response time frame such as vacuum trucks, transfer trailers or dump trucks, backhoe/trackerhoe, sweepers, mobile storage and/or frac tanks and the like,
- Management of projects with required Disadvantaged Minority Business Enterprises programs,
- Documentation of any history of litigation associated with project performance and/or environmental and/or professional liability,
- Documentation of the firm's safety history,
- Documentation of the firm's financial standing and insurance coverage.

Any company that submits a statement of qualifications may be required to make an on-site presentation of its capability to perform as described in its proposal to the City for the Environmental Committee. Such a presentation will be at the company's own expense and will provide an opportunity for the firm to clarify its proposal to ensure a thorough mutual understanding. Presentations should not exceed thirty minutes.

VI. QUALIFICATION STATEMENT DEADLINE

TO BE CONSIDERED FOR THIS RFQ, CONTRACTORS MUST REGISTER WITH THE CITY OF CONCORD BY SENDING AN EMAIL THAT INCLUDES YOUR NAME AND COMPANY CONTACT INFORMATION TO churchwellj@concordnc.gov.

The submission should be limited to 15 pages, printed one side, on 8½" by 11" paper, and single-spaced. Fold out pages are not allowed. Front and back covers and transmittal letter are not considered a part of the 15-page submittal. Submissions exceeding the 15-page limitation will not be considered. **Eight (8) copies** placed in a sealed envelope of the statement of qualifications are due no later than **3:00 p.m. on Monday, February 18, 2013**. No statement of qualifications will be accepted after this time. The mailing address is:

City of Concord
 Engineering Department
 Attn: Jana Churchwell, EI, Project Engineer
 P.O. Box 308
 Concord, NC 28026

V. SELECTION CRITERIA

The considerations below, with their weighted scores, will be utilized for selection of qualified companies. Selection will be made after thorough review conducted by the City's Environmental Health & Safety Committee. Actual interviews may be conducted after review of the responses by interested companies.

1. The company's recent experience, knowledge, and familiarity in the completion of similar work and the firm's demonstrated ability to incorporate the City's preferences. 25%
2. The successful experience of the staff to be assigned to perform the type of work required within the specified constraints established by the City of Concord elected official. 25%
3. The company's ability to meet a time/response schedule established for the work 10%
4. The company's ethical and professional standing and satisfactory performance on any previous contracts with the City of Concord including a positive client relationship, commitment to previous project requirements and sufficient supervision of the work. 25%
5. The firm's financial ability to undertake the work and assure the liability as well as adequacy of an accounting system to identify costs chargeable to the project. 15%

Although no percentage is assigned, it is an absolute requirement of the City that the project work site and work force be drug free and that associated individuals, including subcontractors, working on the project be free of prior or pending felony convictions, the qualifications statement should include a commitment to this requirement and an indication of the plan of the firm to ensure compliance with this requirement.

The City of Concord's Environmental Health & Safety Committee panel will negotiate a contract with the companies following selection. If a contract cannot be successfully negotiated with a particular firm, the firm may not be placed on the rotation list of selected firms. Firms that are not selected will be notified.

The City reserves the right to reject any and all statements of interest. It is anticipated that a firms will be selected and notified no later than March 2013.

VI. CLEANUP & RESPONSE SCHEDULE

When contacted, the Contractor shall be able to respond to the call and arrive at the scene within one (1) hour to begin a reconnaissance and/or remedial action. If not, the City will contact the next company on the rotation list. The qualified firm must have the capability to field a competent incident response team which is able to rapidly mobilize and arrive on scene with sufficient resources to begin remediation. This includes capability to be contacted and respond 24/7 to manage such incidents as Hazardous Material Spill Response and Restoration; Transportation Incident Response including but not limited to Aircraft incidents, Train Derailments, Major transportation incident, Chemical transfers (including high pressure commodities), Reactive and Explosive stabilization and Disposal, Biological Incidents, and/or WMD or Suspect WMD Events.

VII. CONTRACTING

Any contract developed for this work shall be construed and enforced in accordance with the laws of the State of North Carolina. Any controversy or claim arising as a result of contracting shall be settled by an action initiated in the appropriate division of the General Court of Justice in Cabarrus County, North Carolina.

VIII. EQUAL EMPLOYMENT OPPORTUNITY

The local government of the City of Concord does not discriminate administering any of its programs and activities. The Consultant(s) awarded the contract for work will be required to assure that no person shall be denied employment or fair treatment, or in any way discriminated against on the basis of race, sex, religion, age, national origin, or disability.

IX. TERMINATION OF CONTRACT

The City Engineer will have authority, without the necessity of further action by City Council, to terminate this Contract on behalf of the City. The City may terminate this Contract for any reason or no reason by giving written notice of termination at least thirty (30) days before the date of termination. The notice shall specify the date upon which such termination becomes effective and the City shall pay the Contractor for Services rendered prior to the effective date of termination.

By giving written notice, either party may terminate this Contract if the other party violates or fails to perform any covenant, provision, obligation, term, or condition contained in this Contract, provided that, unless otherwise provided in this Contract, such failure or violation shall not be cause for termination if the defaulting party cures such default (if the default is susceptible to cure) within thirty (30) days of receipt of written notice of default from the other party.

Any notice of default shall state the party's intent to terminate this Contract if the default is not cured within the specified time period.

The City may terminate this Contract immediately by written notice to the Contractor upon the occurrence of one or more of the following events each of which shall also constitute a non-exclusive Event of Default:

- a. The Contractor makes or allows to be made any material written misrepresentation or provides any materially misleading written information in connection with this Contract, the Contractor's Proposal, or any covenant, Contract, obligation, term, or condition contained in this Contract;
- b. The Contractor takes or fails to take any action which constitutes grounds for immediate termination under the terms of this Contract, including but not limited to failure to obtain or maintain the insurance policies and endorsements as required by this Contract, or failure to provide the proof of insurance as required by this Contract, or
- c. The Contractor ceases to do business as a going concern, makes an assignment for the benefit of creditors, admits in writing its inability to pay debts as they become due, files a petition in bankruptcy or has an involuntary bankruptcy petition filed against it (except in connection with a reorganization under which

the business of such party is continued and performance of all its obligations under this Contract shall continue), or if a receiver, trustee or liquidator is appointed for it or any substantial part of the other party's assets or properties.

Obligations Upon Expiration Or Termination

Upon expiration or termination of the Contract, the Contractor shall promptly provide or return to the City all equipment, materials, documents, or data, whether in written, graphic, machine readable or other form, supplied by the City in connection with this Contract, in as good condition as when delivered, reasonable wear and tear excepted.

No Effect On Taxes, Fees, Charges Or Reports

Any termination of this Contract will not relieve the Contractor of the obligation to pay any fees, taxes, or other charges then due to the City, or relieve the Contractor of the obligation to file any daily, monthly, quarterly, or annual reports covering the period to termination, or relieve the Contractor from any claim for damages previously accrued or then accruing against the Contractor.

Other Remedies

Upon termination of this Contract, each party may seek all legal and equitable remedies to which it is entitled. The remedies set forth herein shall be deemed cumulative and not exclusive and may be exercised successively or concurrently, in addition to any other available remedies.

X. COVENANTS AND REPRESENTATIONS

The Contractor covenants and represents that it shall exercise a customary degree of care and diligence in performing all services under this Contract. The Contractor shall render services under this Contract in accordance with the customary professional standards prevailing in the Cabarrus County area.

The Contractor further covenants and represents that (i) the services performed by it under this Contract do not violate any contracts with third parties or any third party rights in any patent, trademark, copyright, trade secret or similar right, (ii) that the services performed hereunder shall be performed in a professional manner and by qualified staff and shall satisfy the requirements set forth in this Contract, and (iii) that it has sufficient expertise and resources to perform under this Contract.

The Contractor further represents and covenants that:

- a. It is validly existing and in good standing under the laws of North Carolina;
- b. It has all the requisite corporate power and/or authority to execute, deliver and perform its obligations under this Contract;
- c. The execution, delivery, and performance of this Contract have been duly authorized by the Contractor;
- d. No approval, authorization or consent of any governmental or regulatory authority is required to be obtained or made by it in order for it to enter into and perform its obligations under this Contract; and
- e. In connection with its obligations under this Contract, it shall comply with all applicable federal, state and local laws and regulations and shall obtain all applicable permits and licenses.

Any failure of any services performed by the Contractor to comply with any requirements set forth in this Contract shall be promptly corrected by the Contractor at no cost to the City. The City's approval, acceptance, use of, or payment for all or any part of the Contractor's services or of the Project itself shall in no way alter the Contractor's obligations or the City's rights under this Contract.

XI. PUBLICITY AND STATEMENTS TO THE PRESS

The selected Contractor(s) agree to adhere to the City of Concord's Media Policy included in the Contract as Exhibit C.

XII. CONTRACT

STANDARD FORM OF CONTRACT

This contract is made and entered into as of the ___ day of _____, 20____, by the City of CONCORD (“City”) and _____ (“Contractor”), (x) a corporation, () a professional corporation, () a professional association, () a limited partnership, () a sole proprietorship, or () a general partnership; organized and existing under the laws of the State of _____.

Sec. 1. Background and Purpose. City desires to procure the Contractor to perform rapid response environmental services as needed on a rotating basis as outlined hereinafter upon the terms and conditions as set out herein; the City is authorized by the City Council to enter into a Contract for performance of such services. The City and the Contractor, for consideration hereinafter stipulated, mutually agree that the Contractor shall perform the services provided under this Contract and shall do, perform and carry out in a satisfactory manner, as determined by the City, the following services as described in Section 2. The City will attempt to follow a rotation in using selected Contractors where it is both appropriate and practical. However, the Contractor understands that the City may deviate from the rotation at the discretion of the Emergency Management/Incident Command or other officials on the scene based on their assessment of an emergency and the needed resources and they shall remain free to utilize discretion in contacting the various Contractors on the list. As such, decisions may be made by officials as to which Contractor(s) are contacted and in which order based on the specifics of the incident such as location, timing, potential danger to life, safety, and/or the environment, and each Contractor's qualifications or other relevant factors.

Sec. 2. Services and Scope to be Performed. The Contractor shall provide the following services at the unit charges set forth either in this paragraph or in Exhibit A Fee Schedule, at a not to exceed total amount of \$25,000 per incident, unless otherwise approved in advance and in writing by the City, and not to exceed a total amount of \$75,000; in either case, this contract shall apply. In this contract, “services” means the services that the Contractor is required to perform pursuant to this contract and all of the Contractor’s duties to the City that arise out of this contract. Any amendments, corrections, or change orders by either party must be made in writing signed in the same manner as the original. (This form may be used for amendments and change orders.) The City reserves the right to refuse payment for any work outside that authorized herein or pursuant to a duly approved amendment or change order.

The Contractor shall provide rapid response environmental services that may include (1) excavation of environmental contamination encountered during construction of City projects, and (2) vacuum/pumping services for removal of solid and liquid hazardous and non-hazardous materials from oil/water separators, stormwater catch basins, sumps, drains, streams, ponds, etc., (3) UST/AST removal/closures, (4) Sampling of soils, groundwater, and/or surface waters for the purpose of confirmation of adequate cleanup according to applicable North Carolina General Statutes, Guidelines established by the North Carolina Department of Environment and Natural Resources (NCDENR), rules set forth by the United States Environmental Protection Agency (USEPA), the United States Department of Transportation (USDOT), and any other applicable federal, State, and local rules and regulations, and (5) to perform these services and conduct business in accordance with the applicable rules set forth by the USEPA, United States Occupational Safety and Health Administration (US OSHA) and the North Carolina Department of Labor (NCDOL), and (6) to provide a written summary of each spill incident to the City of Concord that includes adequate documentation describing (a) the nature and estimated amount of the spill incident, (b) the location of each incident, (c) soil and/or water sampling documents confirming adequate cleanup, (d) transportation and disposal manifests, (e) associated sampling for disposal purposes according to the requirements of the appropriate disposal facility, and (f) for Contractors possessing a valid and current license in the State of North Carolina for the installation of public utilities (PU), scope of work may also include the installation of water and/or wastewater utilities in conjunction with, or in addition to, the above emergency response activities. For this type of work, the attached Exhibit D General Conditions and Exhibit E Supplementary Conditions are applicable and are incorporated as additional Attachments to the Contract.

Estimated Cost of Incident

Upon response to an incident and after there has been the opportunity for initial assessment through reconnaissance by the Contractor, a site-specific scope of work that includes estimated quantities and a total project estimate shall be given to the City as soon as possible for the issuance of an emergency purchase order by the City. Once the specific project estimate is quoted for the project, the Contractor shall not exceed the total quoted amount unless first approved in writing by the City.

The Contractor agrees to provide services described in items (4), (5), and (6) above regardless of the type and amount of spill or incident.

The Contractor acknowledges understanding of the information and requirements set forth in Exhibit B - **NCDENR Requirements & Excerpts From Guidelines** and Exhibit C - City of Concord Media Policy. The Contractor agrees to provide services to the City to maintain compliance with the information and requirements set forth in Exhibit B and Exhibit C.

Sec. 3. Complete Work without Extra Cost. Unless otherwise provided, the Contractor shall obtain and provide, without additional cost to the City, all labor, materials, equipment, transportation, facilities, services, permits, and licenses necessary to perform the Work according to the unit Fee Schedule provided in Exhibit A.

Sec. 4. Compensation. The City shall pay the Contractor for the Work as provided in either this paragraph or in Exhibit A – Fee Schedule. Any additional services needed beyond regularly scheduled services may require additional charges. The City shall not be obligated to pay the Contractor any payments, fees, expenses, or compensation other than those authorized by this section or authorized by a duly approved amendment or change order.

Sec. 5. Term. This Contract shall begin on _____ 2__ and end at _____ 2___. This Contract shall not be automatically extended unless agreed to in writing by the City or as provided in Exhibit A -Fee Schedule.

Sec. 6. Contractor’s Billings to City. Payments will be made in accordance with either this paragraph or in Exhibit A at a not to exceed amount of \$25,000 per incident, and not to exceed a total amount of \$75,000, unless otherwise approved in advance and in writing by the City; in either case, this contract shall apply. Contractor shall submit an original pay request (invoice) to the City Purchasing Agent by the first of each month to expedite payment. Upon receipt of the pay request the City Purchasing Agent will verify the amounts and if correct, will forward the pay request to the Finance Department for payment. Final payment shall be made to the Contractor within thirty (30) days after all work has been fully completed and verified by the City project manager.

Sec. 7. Insurance. Contractor shall maintain insurance policies at all times with minimum limits as follows:

<u>Coverage</u>	<u>Minimum Limits</u>
Workers’ Compensation	\$100,000 each accident, \$500,000 bodily injury by disease, \$500,000 bodily injury by disease policy limit
General Liability	<input type="checkbox"/> \$500,000 per occurrence if contract does not exceed 30 days and does not exceed \$25,000; otherwise, <input checked="" type="checkbox"/> \$1,000,000 per occurrence/\$2,000,000 aggregate
Automobile Liability	<input type="checkbox"/> \$500,000 per occurrence if contract does not exceed 180 days and does not exceed \$500,000; otherwise, <input checked="" type="checkbox"/> \$1,000,000 per occurrence
Umbrella	<input type="checkbox"/> \$1,000,000 per occurrence if contract does not exceed 180 days and does not exceed \$500,000; otherwise, <input checked="" type="checkbox"/> \$2,000,000
Environmental/Pollution Liability	<input checked="" type="checkbox"/> \$2,000,000 per occurrence

Contractor shall provide the City with a Certificate of Insurance for review prior to the issuance of any contract or Purchase Order. All Certificates of Insurance will require thirty (30) days written notice by the insurer or contractor’s agent in the event of cancellation, reduction or other modifications of coverage. In addition to the notice requirement above, Contractor shall provide the City with immediate written notice of cancellation, reduction, or other modification of coverage of insurance. Upon failure of the Contractor to provide such notice, Contractor assumes sole responsibility for all losses incurred by the City for which insurance would have provided coverage. The insurance certificate shall be for the initial contract period of one (1) year and shall be renewed by the contractor for each subsequent renewal period of the contract.

The City shall be named as an additional insured and it is required that coverage be placed with “A” rated insurance companies acceptable to the City. Statement should read, “City of Concord is to be added as an additional insured as

evidenced by an endorsement attached to this certificate.” Failure to maintain the required insurance in force may be cause for contract termination. In the event that the contractor fails to maintain and keep in force the insurance herein required, the City has the right to cancel and terminate the contract without notice.

All those doing business with the City must have a current Privilege License issued by the City of Concord if a privilege license is authorized by law.

Sec. 8. Performance of Work by City. If the Contractor fails to perform the Work in accordance with the schedule referred to in Exhibit A, the City may, in its discretion, perform or cause to be performed some or all of the Work, and doing so shall not waive any of the City’s rights and remedies. Before doing so, the City shall give the Contractor reasonable notice of its intention. The Contractor shall reimburse the City for all costs incurred by the City in exercising its right to perform or cause to be performed some or all of the Work pursuant to this section.

Sec. 9. Attachments. The following attachments are made a part of this contract and incorporated herein by reference: Exhibit A – Fee Schedule, Exhibit B – NCDENR Requirements & Excerpts from Guidelines, Exhibit C – City of Concord Media Policy, Exhibit D – General Conditions, Exhibit E – Supplementary Conditions.

In case of conflict between an attachment and the text of this contract excluding the attachment, the text of this contract shall control. Any attachment that materially alters the standard terms contained herein must be reviewed by the City Attorney and approved by the City in writing.

Sec. 10. Notice. (a) All notices and other communications required or permitted by this contract shall be in writing and shall be given either by personal delivery, fax, or certified United States mail, return receipt requested, addressed as follows:

To the City:

City of Concord
P.O. Box 308
Concord, NC 28025
Fax Number: (704) 786-4521

To the Contractor:

Albert Benshoff, Esq.
City Attorney
PO Box 308
Concord, NC 28026

Change of Address, Date Notice Deemed Given: A change of address, fax number, or person to receive notice may be made by either party by notice given to the other party. Any notice or other communication under this contract shall be deemed given at the time of actual delivery, if it is personally delivered or sent by fax. If the notice or other communication is sent by US Mail, it shall be deemed given upon the third calendar day following the day on which such notice or other communication is deposited with the US Postal Service or upon actual delivery, whichever first occurs.

Sec. 11. Indemnification. To the maximum extent allowed by law, the Contractor shall defend, indemnify, and save harmless the City of Concord, its agents, officers, and employees, from and against all charges that arise in any manner from, in connection with, or out of this contract as a result of the acts or omissions of the Contractor or subcontractors or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable except for damage or injury caused solely by the negligence of the City its agents, officers, or employees. In performing its duties under this section, the Contractor shall at its sole expense defend the City of Concord, its agents, officers, and employees with legal counsel reasonably acceptable to City. As used in this subsection – “Charges” means claims, judgments, costs, damages, losses, demands, liabilities, duties, obligations, fines, penalties, royalties, settlements, expenses, interest, reasonable attorney’s fees, and amounts for alleged violations of sedimentation pollution, erosion control, pollution, or other environmental laws, regulations, ordinances, rules, or orders. Nothing in this section shall affect any warranties in favor of the City that are otherwise provided in or arise out of this contract. This section is in addition to and shall be construed separately from any other indemnification provisions that may be in this contract. This section shall remain in force despite termination of this contract (whether by expiration of the term or otherwise) and termination of the services of the Contract under this contract.

Sec. 12. Corporate Status. If the Contractor is dissolved or suspended and the Contractor does not notify the City of such dissolution within three (3) business days from date of dissolution or suspension, and/or the corporate status is not reinstated within thirty (30) days, this contract, at the sole option of the City, shall be declared null and void or the Contractor shall execute a new contract showing the Contractor’s correct legal entity.

Sec. 13. Miscellaneous.

(a) Choice of Law and Forum. This contract shall be deemed made in Cabarrus County, North Carolina. This contract shall be governed by and construed in accordance with the laws of North Carolina. The exclusive forum and venue for all actions arising out of this contract shall be the appropriate division of the North Carolina General Court of Justice, in Cabarrus County. Such actions shall neither be commenced in nor removed to federal court. This section shall not apply to subsequent actions to enforce a judgment entered in actions heard pursuant to this section.

(b) Waiver. No action or failure to act by the City shall constitute a waiver of any of its rights or remedies that arise out of this contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

(c) Performance of Government Functions. Nothing contained in this contract shall be deemed or construed so as to in any way stop, limit, or impair the City from exercising or performing any regulatory, policing, legislative, governmental, or other powers or functions.

(d) Severability. If any provision of this contract shall be unenforceable, the remainder of this contract shall be enforceable to the extent permitted by law.

(e) Assignment, Successors and Assigns. Without the City's written consent, the Contractor shall not assign (which includes to delegate) any of its rights (including the right to payment) or duties that arise out of this contract. Unless the City otherwise agrees in writing, the Contractor and all assigns shall be subject to all of the City's defenses and shall be liable for all of the Contractor's duties that arise out of this contract and all of the City's claims that arise out of this contract. Without granting the Contractor the right to assign, it is agreed that the duties of the Contractor that arise out of this contract shall be binding upon it and its heirs, personal representatives, successors, and assigns.

(f) Compliance with Law. In performing all of the Work, the Contractor shall comply with all applicable law.

(g) City Policy. THE CITY OPPOSES DISCRIMINATION ON THE BASIS OF RACE AND SEX AND URGES ALL OF ITS CONTRACTORS TO PROVIDE A FAIR OPPORTUNITY FOR MINORITIES AND WOMEN TO PARTICIPATE IN THEIR WORK FORCE AND AS SUBCONTRACTORS AND VENDORS UNDER CITY CONTRACTS.

(h) EEO Provisions. During the performance of this Contract the Contractor agrees as follows:

(1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, political affiliation or belief, age, or handicap. The Contractor shall take affirmative action to insure that applicants are employed and that employees are treated equally during employment, without regard to race, color, religion, sex, national origin, political affiliation or belief, age, or handicap. The Contractor shall post in conspicuous places available to employees and applicants for employment, notices setting forth these EEO provisions. (2) The Contractor in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, political affiliation or belief, age, or handicap.

(i) No Third Party Right Created. This contract is intended for the benefit of the City and the Contractor and not any other person.

(j) Principles of Interpretation. In this contract, unless the context requires otherwise the singular includes the plural and the plural the singular. The pronouns "it" and "its" include the masculine and feminine. Reference to statutes or regulations include all statutory or regulatory provisions consolidating, amending, or replacing the statute or regulation. References to contracts and agreements shall be deemed to include all amendments to them. The word "person" includes natural persons, firms, companies associations, partnerships, trusts, corporations, governmental agencies and units, and any other legal entities.

(k) Modifications, Entire Agreement. A modification of this contract is not valid unless signed by both parties and otherwise in accordance with requirements of law. Further, a modification is not enforceable against the City unless the City Manager or other duly authorized official signs it for the City. This contract contains the entire agreement between the parties pertaining to the subject matter of this contract. With respect to that subject matter, there are no promises, agreements, conditions, inducements, warranties, or understandings, written or oral, expressed or implied, between the parties, other than as set forth or referenced in this contract.

(l) W-9 Form. Contractor shall provide a completed W-9 form to the City upon execution of this contract.

IN WITNESS WHEREOF, the City of Concord and the Contractor have caused this contract to be executed under seal by their respective duly authorized agents or officers.

CITY OF CONCORD:

(Typed or Printed Legal Name of Contractor)

By: _____
City Manager

By: _____
Signature of President/Vice President/Manager/Partner

Printed Name: _____
Title: _____

ATTEST BY:

ATTEST BY:

City Clerk
SEAL

Signature of Vice President, Secretary, or other officer

Printed Name: _____
Title _____
SEAL

APPROVED AS TO FORM:

Attorney for the City of Concord

APPROVAL BY CITY FINANCE OFFICER

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

Signature

EXHIBIT A

FEE SCHEDULE

**[DO NOT attach at this time.
Contractor's Fee Schedule to be attached
after qualified firms have been selected.]**

EXHIBIT B

**NC DENR REQUIREMENTS &
EXCERPTS FROM GUIDELINES**

5.0 Cleanup Requirements for Contaminated Soil

The goal of soil restoration is to ensure that groundwater contamination does not occur or continue to occur. Table 1 outlines the required analytical methods for contaminated soil. In response to the need for a simple method for contaminant identification and to lower the cost of analysis, for the present time the UST Section will continue to allow the use of the TPH method analyses for suspected or known petroleum contamination. The TPH Action Levels are as follows:

Analytical Method	Action Level
EPA Method 8015B	10 ppm TPH
EPA Method 8015B	40 ppm TPH
EPA Method 9071B (Oil & Grease)	250 ppm Oil & Grease

In the event petroleum contaminated soil is located near the groundwater, the regional office for the UST Section may require analyses in addition to or in lieu of TPH. These additional requirements are outlined in Table 2, however you should contact the appropriate regional office to determine if they are necessary.

Soil cleanup levels have been established for some commonly encountered compounds. The soil-to-groundwater maximum soil contaminant concentrations were established to protect groundwater from the leaching of contaminants in soil. **Contaminated soil must be cleaned up to the soil-to-groundwater maximum contaminant concentrations.** Contaminated soil clean-up levels are provided in Table 3. *The most recent version of these cleanup levels may be downloaded from the Internet from the following web site address* <http://www.wastenotnc.org/ust/docs/tblmscc.pdf>.

The equations used by the Department to calculate the soil-to-groundwater maximum soil contaminant concentrations are provided in Figure 3. The soil organic carbon-water partition coefficients, soil-water partition coefficients and Henry's Law Constants used to calculate the soil-to-groundwater maximum contaminant concentrations for organic and inorganic compounds were obtained from the following references:

- EPA, 1996. Soil Screening Guidance: Technical Background Document. (EPA/540/R95/128);
- EPA, 1986. Superfund Public Health Evaluation Manual. Office of Emergency and Remedial Response (EPA/540/1-86/060);
- Agency for Toxic Substances and Disease Registry, "Toxicological Profile *for [individual chemical]*." U.S. Public Health Service;
- Montgomery, J.H., 1996. Groundwater Chemicals Desk Reference. CRC Press, Inc.;
- Sims, R.C., J.L. Sims and S.G. Hansen, 1991. Soil Transport and Fate Database, Version 2.0. EPA Robert S. Kerr Environmental Laboratory; and
- Baes, C.F., III, R.D. Sharp, A.L. Sjoeren, and R.W. Shor, 1984. A Review and Analysis of Parameters for Assessing Transport of Environmentally Released Radionuclides through Agriculture. Oak Ridge National Laboratory;
- Other appropriate, published, peer-reviewed and scientifically valid data.

Table 1 Required Analyses for Contaminated Soil

(Laboratories must be certified by the North Carolina DWQ to perform the following methods)

Suspected Contaminants	Analytical Method (See Notes)	Reportable Concentrations
1. Low Boiling Point Fuels: gasoline, aviation gasoline, gasohol, etc.	5030 sample preparation with 8015B	Any Amount Above the MDL
2. Medium/High Boiling Point Fuels: jet fuels, kerosene, diesel, varsol, mineral spirits, naphtha, fuel oil #2, etc.	5030 AND 3550 sample preparation with 8015B	Any Amount Above the MDL
3. Heavy Fuels: #4, #5, #6 fuel oils; motor oil; hydraulic fluid; etc.	EPA Method 9071B - (Oil & Grease)	250 ppm
4. Used / Waste Oil	EPA Method 8021 or 8260B (Volatiles); EPA Method 9071B (Oil & Grease); EPA 8082 (PCB's); EPA 8081 (Pesticides) AND EPA 3050B or 3051 Preparation: Total Metals (Chromium and Lead)	250 ppm for Oil and Grease AND Any Amount Above the MDL for others
5. Metals	Total Metals	Any Amount Above the MDL
6. Halogenated Solvents	EPA Method 8021 or 8260B	Any Amount Above the MDL
7. Non-Halogenated Solvents	EPA Method 8021 or 8260B (8015B if appropriate for known solvent)	
8. Non-Petroleum – Unknown	8260B (volatiles), 8270C (semi-volatiles), 8081A (pesticides), 8082 (PCBs) AND Total Metals	Any Amount Above the MDL
9. Pesticides	Contact NC Dept of Agriculture & Consumer Services, Pesticide Section (919) 733-3556 AND DWQ Regional Office	Any Amount Above the MDL
10. Substances not covered above	Contact UST Section Regional Office	Any Amount Above the MDL

NOTES: (1) Report all results on a “dry weight” basis, (2) Submit copies of original lab reports, (3) For analytical methods associated with a Corrective Action Plan under .0106(k) or (l), see the 2L “Implementation Guidance”, (4) Other comparable EPA-approved methods which target the same constituents as the listed methods and have equivalent or lower detection limits may be used if analyses are conducted by a DWQ-certified laboratory and prior approval is obtained from the appropriate Regional Office. (5) **Additional analytical methods may be required if contaminated soil is to be disposed of or treated at a permitted facility. Contact the disposal facility for its specific requirements.**

Abbreviations

GC-FID = Gas Chromatograph and Flame Ionization Detector
 EPA = Environmental Protection Agency
 MDL = Method Detection Limit
 PCBs = Polychlorinated biphenyls

Table 2 Additional Analyses for Petroleum-Contaminated Soil

(May be required by UST Section depending on site-specific conditions)

(Laboratories must be certified by the North Carolina DWQ to perform the following methods)

Suspected Contaminants	Analytical Method (See Notes)	Reportable Concentrations
1. Low Boiling Point Fuels: gasoline, aviation gasoline, gasohol, etc.	EPA 8260B or 8021 with IPE & MTBE	Any Amount Above the MDL
2. Medium/High Boiling Point Fuels: jet fuels, kerosene, diesel, varsol, mineral spirits, naphtha, fuel oil #2, etc.	EPA 8260B or 8021 AND EPA 8270C	Any Amount Above the MDL
3. Used / Waste Oil	EPA 8260B or 8021 (volatiles); EPA 8270C; EPA Method 9071B (Oil & Grease); EPA 8082 (PCBs); EPA 8081A (Pesticides); AND EPA Method 3050B or 3051 Preparation: Total Metals (Chromium and Lead)	250 ppm for Oil & Grease AND Any amount above the MDL for other analytes

NOTES: (1) Report all results on a “dry weight” basis, (2) Submit copies of original lab reports (3) For analytical methods associated with a Corrective Action Plan under .0106(k) or (l), see the 2L “Implementation Guidance. (4) Other comparable EPA-approved methods which target the same constituents as the listed methods and have equivalent or lower detection limits may be used if analyses are conducted by a DWQ-certified laboratory and prior approval is obtained from the appropriate Regional Office. (5) **Additional analytical methods may be required if contaminated soil is to be disposed of or treated at a permitted facility. Contact the disposal facility for its specific requirements.**

Abbreviations

EPA = Environmental Protection Agency
IPE = Isopropyl et
MDL = Method Detection Limit
MTBE = Methyl tertiary butyl ether
PCBs = Polychlorinated biphenyls

Cleanup levels for soil contaminated by non-petroleum products not listed in Table 3 will be based on the MDL. Naturally occurring background levels may be considered in determining a cleanup level for metals in soil.

The use of a suitable contaminant transport model will likely be necessary to demonstrate that the concentration of a contaminant in soil will not result in a violation of groundwater standards. Whenever possible, site-specific data including depth of contamination, depth to the water table, depth to bedrock, and soil characteristics such as permeability, organic carbon fraction, bulk density, etc. should be incorporated into the model.

Biodegradation may be factored into a transport model only if a contaminant is capable of being degraded under the conditions present at the site. Biodegradation may be considered only if site specific evidence is provided demonstrating that it is occurring.

If selecting a computer transport model, the user should consider the track record of the program. A well-documented modeling package that has been field tested by a number of workers and documented in the literature is recommended. In addition, the user should select a model with inherent assumptions that are appropriate for the site conditions. The minimum documentation required for modeling includes:

- Name, version and developer of the model;
- Type of site for which the model is applicable;
- Critical conceptual assumptions and estimates of input values;
- Calibration process;
- Range of values used and the results of sensitivity analyses on critical data inputs; and
- Graphical representation and narrative explanation of the modeling results.

NOTE: *All assumptions and estimated values, including biodegradation rates, must be conservative (predict reasonable-worst case scenario) and must be well documented.*

REFERENCES

- Eisenberg, D.M., and others, 1985, Guidelines for Addressing Fuel Leaks, California Regional Quality Control Board San Francisco Bay Region, 43 pp.
- US EPA 1990, Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods, US EPA SW-846, Third Edition, November, 1990.
- US EPA 1984, Federal Register, October 26, 1984, 40 CFR part 136.
- US EPA 1990. Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods. U.S. EPA publication number SW-846. Third Edition, November 1990, or most recent edition.

Table 3 Contaminated Soil Clean-Up Levels

(See UST web site for current table)

Constituent	CAS#	Soil-to-Water Maximum Contaminant Concentration (Soil mg/kg)
Acenaphthene	83-32-9	8.2
Acenaphthylene	208-96-8	11
Acetone	67-64-1	2.8
Aliphatics, C5-C8	N/A	72
Aliphatics, C9-C18	N/A	3300
Aliphatics, C19-C36	N/A	##
Anthracene	120-12-7	1000
Aromatics, C9-C22	N/A	34
Barium	7440-39-3	848
Benzene	71-43-2	0.0056
Benzo(a)anthracene	56-55-3	0.34
Benzo(b)fluoranthene	205-99-2	1.2
Benzo(g,h,i)perylene	191-24-2	6700
Benzo(k)fluoranthene	207-08-9	12
Benzo(a)pyrene	50-32-8	0.091
Benzoic Acid (H' @ pH 6.8)	65-85-0	110
Bis(chloroethyl)ether (BCEE)	111-44-4	0.0002
Bis(2-ethylhexyl)phthalate (DEHP)	117-81-7	5.6
Bromoform	75-25-2	0.028
n-Butylbenzene	104-51-8	4.3
sec-Butylbenzene	135-98-8	3.3
tert-Butylbenzene	98-06-6	3.4
Carbon disulfide	75-15-0	4.3
Chlorobenzene	108-90-7	0.44
Chloroform (trichloromethane)	67-66-3	0.37
Chloromethane (methyl chloride)	74-87-3	0.02
Chromium (Total)	7440-50-8	27
Chromium III	16065-83-1	27
Chromium VI	18540-29-9	27
Chrysene	218-01-9	38
Dibenz(a,h)anthracene	53-70-8	0.17
Dibenzofuran	132-64-9	4.7
Dibromochloromethane	124-48-1	0.0022
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.000002
1,2-Dichlorobenzene (ortho)	95-50-1	0.28
1,3-Dichlorobenzene (meta)	541-73-1	6.5
1,4-Dichlorobenzene (para)	106-46-7	0.023
Dichlorodifluoromethane (Freon-12)	75-71-8	306
1,1-Dichloroethane	75-34-3	0.38
1,2-Dichloroethane (ethylene dichloride)	107-06-2	0.0018
1,2-Dichloroethene (cis)	156-59-2	0.35
1,2-Dichloroethene (trans)	156-60-5	0.54

Constituent	CAS#	Soil-to-Water Maximum Contaminant Concentration (Soil mg/kg)
1,1-Dichloroethylene	75-35-4	0.045
1,2-Dichloropropane	78-87-5	0.0026
1,3-Dichloropropene (cis and trans)	542-75-6	0.001
2,4-Dimethylphenol (2,4-xylenol)	105-67-9	0.9
Ethyl Acetate	141-78-6	11
Ethylbenzene	100-41-4	4.6
Ethylene Glycol	107-21-1	56
Fluoranthene	206-44-0	280
Fluorene	86-73-7	44
Hexachlorobutadiene	87-68-3	0.26
2-Hexanone (Methyl n-Butyl Ketone)	591-78-6	1.9
Indeno(1,2,3-cd)pyrene	193-39-5	3.3
Isopropyl benzene (Cumene)	98-82-8	1.7
Isopropyl ether (diisopropyl ether)	108-20-3	0.37
Lead	7439-92-1	270
Methanol	67-56-1	14
Methyl ethyl ketone (2-Butanone)	78-93-3	17
Methyl tert-butyl ether (MTBE)	1634-04-4	0.92
Methylene chloride	75-09-2	0.02
2-Methylnaphthalene	91-57-6	1.7
Naphthalene	91-20-3	0.58
Pentachlorophenol	87-86-5	0.0063
Phenanthrene	85-01-8	60
Phenol	108-95-2	1.7
n-Propylbenzene	103-65-1	1.7
Pyrene	129-00-0	290
Silver	7440-22-4	0.23
Styrene (ethenylbenzene)	100-42-5	2.2
1,1,2,2-Tetrachlorethane	79-34-5	0.001
Tetrachloroethylene(PCE, perchloroethylene)	127-18-4	0.0074
1,2,4-Trichlorobenzene	120-82-1	2.6
1,1,1-Trichloroethane (methyl chloroform)	71-55-6	1.6
Trichloroethylene (TCE)	79-01-6	0.018
Trichlorofluoromethane	75-69-4	31
1,2,4-Trimethylbenzene	95-63-6	7.5
1,3,5-Trimethylbenzene	108-67-8	7.3
Toluene	108-88-3	7.3
vinyl chloride	75-01-4	0.000094
Xylenes (mixed)	1330-20-7	5

Health based level > 100%

Updated 02/01/06

Considered immobile

Figure 3 Transport Model for Calculation of Soil-To-Groundwater Maximum Contaminant Concentrations

$$C_{\text{soil}} = C_{\text{gw}} \left[k_s + \frac{(\theta_w + \theta_a H')}{P_b} \right] df$$

	<u>Parameters</u>	<u>Parameter Values</u>	<u>Units</u>
C_{soil}	Maximum Soil Contaminant	not applicable	mg/kg - soil
C_{gw}	Applicable Groundwater Target Concentration	chemical-specific	mg/L - water
df	Dilution factor	20	unitless
k_s	Soil-water partition coefficient for organic constituents $k_s = k_{oc}f_{oc}$ for inorganic constituents $k_s = k_d$	chemical-specific	L/kg
k_{oc}	Soil organic carbon-water partition coefficient	chemical-specific	L/kg
f_{oc}	Fraction of organic carbon in subsurface vadose soil	.001 (0.1%)	kg/kg
k_d	Soil-water partition coefficient for inorganics	chemical-specific(pH=5.5)	L/kg
θ_w	Water-filled soil porosity - vadose soil	0.3	$L_{\text{water}}/L_{\text{soil}}$
θ_a	Air-filled soil porosity - vadose soil	0.13	$L_{\text{air}}/L_{\text{soil}}$
P_b	Dry bulk density	1.5	kg/L
H'	Henry's Law constant - dimensionless	chemical-specific	unitless
	<i>where: H' = Henry's Law constant ($atm \cdot m^3/mole$) x conversion factor of 41</i>		

6.0 Soil Sampling Guidelines and Analytical Requirements

The quantity and locations of samples specified in this guidance document are intended to be the minimum required to define the extent of soil contamination. Additional samples should be taken when contamination is known or suspected at potential sources or along preferential pathways

Determination of soil contamination must be made by the laboratory analytical methods presented in Tables 1 and 2. All analyses are required to be performed using DWQ-approved analytical methods and the laboratories used must be DWQ-certified to run the approved methods. A current list of NC Certified Laboratories may be obtained from the Division of Water Quality, Laboratory Section at (919) 733-3908.

6.1 Field Screening

Portable organic vapor analyzers (Flame Ionization Detectors [FIDs], Photoionization Detectors [PIDs]) and immunoassay field test kits are useful tools for on-site sample screening and sample selection for laboratory analysis. However, because of the lack of specificity, accuracy, precision, and quality assurance/quality control (QA/QC), field screening data will not be acceptable for confirming the presence, nature or extent of soil contamination; only laboratory results will be acceptable.

6.2 Sample Preparation

The type of sample containers used depends on the type of analysis needed. First determine the type(s) of contaminants expected and the proper analytical method(s) as established in Tables 1 and 2. Then refer to Table 4 for typical container, preservation and storage information. Be sure to consult with your selected laboratory for its specific needs and requirements prior to sampling.

Always select a DWQ-certified laboratory to perform the required soil analyses, and ask the laboratory about any specific sample handling procedures required by the analytical methods. Sample containers, volumes, procedures, and preservation vary among methods. In addition, different laboratories may require different amounts of sample to conduct the analyses.

Sampling kits for sample collection and transport may be purchased from some commercial laboratories. They include all the items needed (sample containers, labels, shipping cartons, etc.) for sample collection and shipment. If you use these services, carefully follow the instructions provided and do not discard any preservative that may have been added to the containers. If you do not choose to use a customized kit provided by your laboratory, use only new containers of the appropriate type for the contaminants for which you are sampling. Check with the laboratory that will be running the analysis about appropriate sample containers and preservation requirements for each method. **If proper sampling and QA/QC protocols are not followed, your results may not be valid.**

Label sample containers prior to sample collection. Each sample label should include the sample location and/or well number, sample identification, the date and time of collection, the analyses to be performed, the preservative added (if any), the sampler's initials, and any other pertinent information for sample identification. Also prepare the storage and transport containers (ice

chest, etc.) prior to taking any samples so that each collected sample can be placed in an environment chilled to approximately 4 degrees C immediately after collection.

6.3 Soil Sample Collection Procedures

Soil samples should be collected under the responsible charge of a professional engineer or licensed geologist if soil contamination is suspected or identified. Soil samples should be collected in a manner that causes the least disturbance of the internal structure of the soil and reduces the exposure to heat, sunlight and open air. Likewise, care should be taken to keep the samples from being contaminated by other material at the site or from contaminating other samples taken from the site (i.e., the sample container should be clean and the outside should be kept uncontaminated).

When collecting samples of potentially contaminated soil, care should be taken to prevent contact with skin or other parts of the body. Disposable gloves should be worn by the sample collector and should be changed between samples to avoid cross-contamination. At a minimum, a clean, stainless steel split spoon sampler should be used to collect each sample and it should be decontaminated between sampling events.

Ideally, samples should be collected from cores of the soil. For practical reasons, however, it may be necessary to collect samples from a backhoe bucket, hand auger, or even a shovel. As long as an effort is made to reduce the loss of contaminants from the sample, any of these methods may be used. Samples for volatile organic compound (VOC) analysis should be collected with minimal handling and agitation.

Immediately upon removal from the ground, each sample must be placed in a proper container for the analysis to be performed. The sample should fill the entire volume of the container, leaving no headspace unless the method requires otherwise. Refer to Table 4 for the required sample containers and volume for each analytical method. If necessary, add preservative prior to filling sample jars. As soon as the sample is collected the container should be immediately capped, sealed and stored at 4° C.

Soil samples collected to document excavation clean-up success should be taken in undisturbed material below the area of excavation. A sufficient number of samples should be collected to demonstrate all contamination has been removed in both horizontal and vertical directions.

Sample containers must be labeled with the sample location and/or well number, sample identification, the date and time of collection, the analysis to be performed, the preservative added (if any), the sampler's initials, and any other pertinent information for sample identification. The labels should contain a unique identifier (e.g., unique well numbers) that can be traced to the chain-of custody form.

6.4 Sample Storage and Transport

Store samples for transport in a manner that will prevent breakage. The samples should be kept at a temperature of approximately 4°C following collection. Add ice, if necessary, and transport

to a DWQ-certified laboratory as soon as possible. Avoid unnecessary handling of sample containers. Avoid heating (room temperature or above, including exposure to sunlight) or freezing of the sample containers. The time between sampling and delivery to a laboratory should be kept to a minimum, and be sure that the analytical holding times of the samples are met (see Table 4).

A chain-of-custody (COC) form must accompany the samples to the laboratory. All blanks on the laboratory form should be completed.

Table 4 Container and Preservation Protocol for Soil Analyses

(Laboratories must be certified by the North Carolina DWQ to perform the following methods)

Sample Type/Method	Container	Preservative	Holding Times
EPA 9071B (Oil & Grease)	4-oz glass jar	Cool to 4°C	28 days
EPA 5030/8015B EPA 8260B EPA 8021	4-oz glass jar with Teflon-lined septa screw cap	Cool to 4°C	14 days
EPA 3550/8015B EPA 8270C EPA 8081A EPA 8082	8-oz glass jar with Teflon-lined screw cap	Cool to 4°C	Samples must be extracted within 14 days and extracts analyzed within 40 days.
Total Metals TCLP Metals	4-oz polyethylene or glass jar	Cool to 4°C	6 months

NOTE: Check with the laboratory that will be doing the analysis for any other requirements.

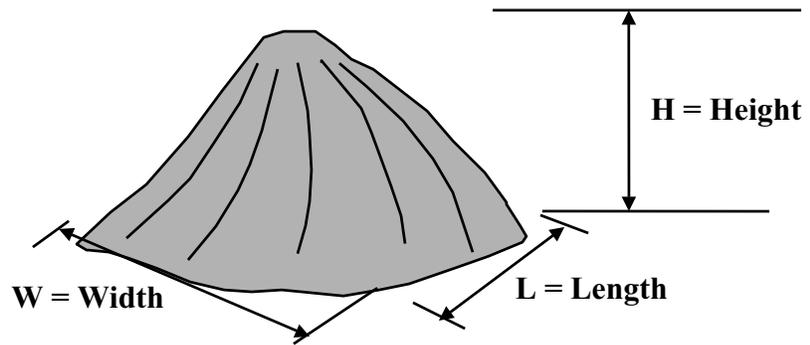
6.5 Sampling Stockpiled Soil

The stockpile should be sampled prior to applying for a permit for disposal. Samples should be collected and handled as described in Section 6.3 and 6.4. Check with the disposal facility concerning analytical requirements for disposal.

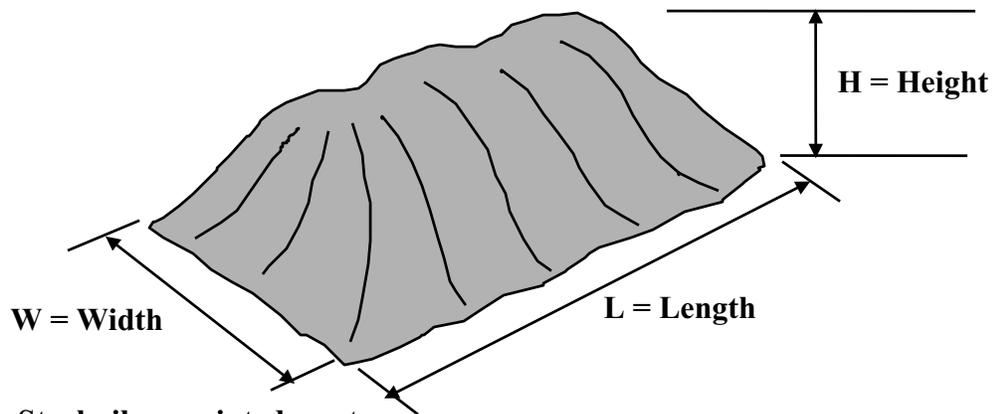
Collect one sample for each 200 cubic yards of the stockpile. The volume of the stockpile can be determined by either calculating the specific geometry of the pile or the excavation, or by approximating the general geometry of the pile as specified in Figure 4. If the volume is approximated, use the maximum dimensions as indicated by the sketches for the different shapes of stockpiles in Figure 4. Once the volume is determined, lay out a grid that divides the pile into square blocks with equal surface area. At least one (1) composite sample must be collected from each grid (See Figure 5).

Figure 4 Volumes of Stockpiles

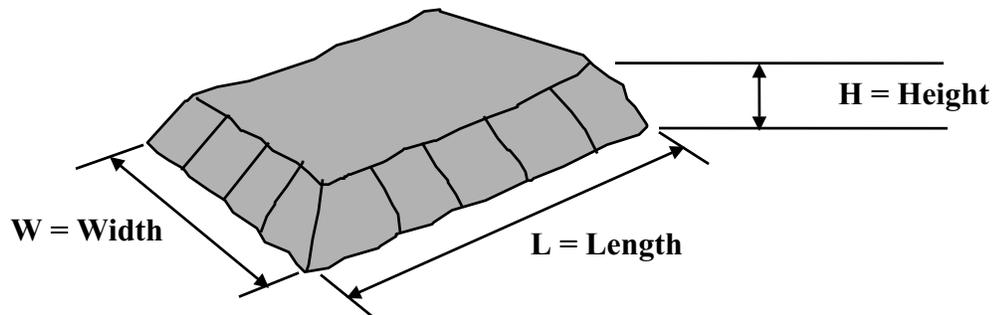
$L > W > H$



Conical Stockpiles:
 Volume = $\frac{1}{3} \times H \times L \times W$



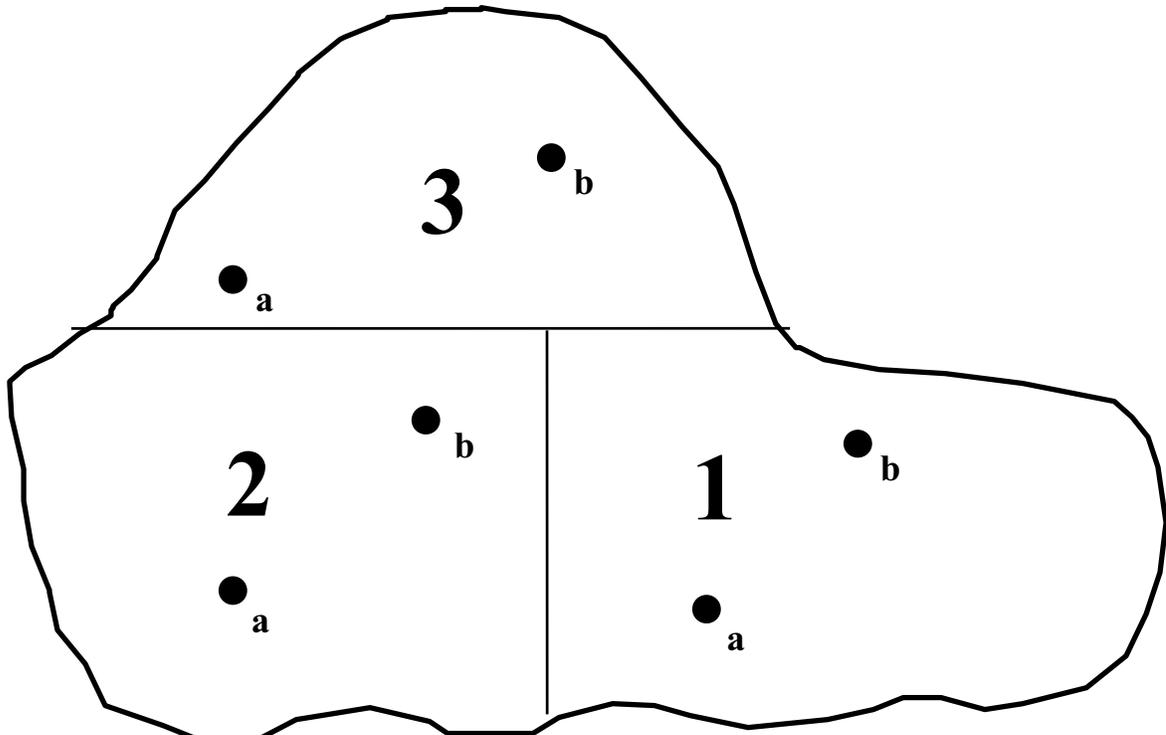
Rectangular Stockpiles - pointed crest:
 Volume = $\frac{2}{3} \times H \times L \times W$



Rectangular Stockpiles - flat topped:
 Volume = $H \times [(L \times W) - (2 \times H \times W)]$

Note: These equations have been simplified for ease of calculation.

Figure 5 Soil Stockpile Sampling Map (Example)



Stockpile Type: Rectangle, Flat Topped

$$\text{Volume} = 4 \times [(21 \times 11) - (2 \times 4 \times 11)] = 572 \text{ cubic yards}$$

where: Height (maximum) = 12 feet = 4 yards
 Length (maximum) = 63 feet = 21 yards
 Width (maximum) = 33 feet = 11 yards

<u>Composite Samples</u>	<u>3 Primary Samples per core</u>	<u>Sample Depths</u>
1	core 1a	1', 4', 7'
	core 1b	1', 5', 8'
2	core 2a	2', 6', 10'
	core 2b	1', 4', 7'
3	core 3a	1', 3', 5'
	core 3b	2', 5', 8'

Note: Each composite sample contains six primary samples, three from core "a" and three from core "b".

6.6 Analytical Requirements for Disposal of Contaminated Soil

Contaminated soil must be disposed of properly or treated at a permitted facility. The analytical requirements will be determined by the facility and the permit. For disposal of contaminated soil, it may also be necessary to analyze soil samples for the toxicity characteristic using EPA Methods 1311, the toxicity characteristic leaching procedure (TCLP). If any contaminant exceeds the regulatory limits established for TCLP, the contaminated soil must be stored, transported and disposed of as a hazardous waste. The TCLP regulatory limits are provided in Table 8. Contact the DWM, Hazardous Waste Section, at (919) 733-8486 for more information.

There is a provision in EPA 1311 (TCLP) that allows use of a total waste analysis to demonstrate that a waste does not exhibit the toxicity characteristic. The following formula may be used to make this determination for a contaminant. **This equation is not to be used to establish cleanup levels.**

M = **C/20** where:

M = maximum theoretical leachate concentration (mg/L);

C = concentration of analyte in the solid (mg/kg), (total concentration);

and

mg/L = ppm =mg/kg.

6.7 Laboratory Reports

Analytical results must be compiled in the appropriate report or as specified by a permit and submitted to the appropriate Regional Office. All compounds analyzed using a certified method must be reported. The laboratory report should include the following, all of which should be submitted to the appropriate regional office of the UST Section in relavent reports:

- Laboratory Certification Number
- Facility Name
- Date of Report Preparation
- Chain-of-Custody
- Analytical Result Summary sheets including QA/QC information
- Laboratory Chronicle and Methodology including holding time checks
- Summary of Calibration Information (date calibrated, ranges, etc.)
- Blank Results (method, field, trip, etc.)
- Method Detection Limits

7.0 Cleanup Requirements for Groundwater

Contaminated groundwater must be cleaned up to the levels of the interim standards and the standards established in 15A NCAC 2L .0202. Final determination of groundwater contamination must be made by the laboratory analytical methods presented in Table 5. Any constituent, not specifically listed in 2L .0202, detected above the laboratory MDL and is not naturally occurring, is considered a violation of the groundwater quality standard.

8.0 Groundwater Sampling Guidelines

Groundwater samples are collected to investigate, assess, and monitor the concentration of dissolved constituents. To properly assess a groundwater contaminant plume, the investigator should install monitoring wells, collect groundwater samples and perform specific laboratory analyses. All nearby water supply wells should also be sampled, but may not be acceptable to properly assess the contaminant plume. The number and location of sampling points will depend upon specific site conditions and the goals of the investigation. All wells must be constructed in accordance with 15A NCAC 2C .0100 by a NC Certified Well Contractor and sampled as outlined in this section. Follow proper sampling procedures to obtain representative samples.

8.1 Field Screening

Several methods are commercially available for screening groundwater samples in the field for contamination. However, because of the lack of specificity, accuracy and precision associated with field screening methods, they are not approved for the determination of groundwater contamination. For sites with moderate to large plumes, it may be feasible to use a DWQ-certified mobile laboratory to perform on-site soil and groundwater analyses while performing a probe survey. As with any laboratory, a mobile laboratory must be DWQ-certified to perform the specific soil and groundwater analytical methods required.

One common method of screening is the pushprobe technology. Pushprobes (e.g., Direct Push, Push Probing, Geoprobng, Direct Point Sampling, Hydraulic Probe Sampling, Hydrocone, Geocone, etc.) are considered rapid assessment tools that are designed to assess the extent of contaminated soil and groundwater. This technology may enable the strategic placement and limit the number of monitoring wells. Use of this technology for installation of monitoring wells may be limited due to site specific geological considerations. Wells installed using this technology must meet the “NC Well Construction Standards” and must be installed by a NC Certified Well Driller.

8.2 Sample Preparation

Always select a DWQ-certified laboratory to perform the required groundwater analyses, and ask the laboratory about any specific sample handling procedures required by the analytical method(s). The DWQ Chemistry Laboratory has a list of laboratories that are certified to run particular analyses. Contact the laboratory at 4405 Reedy Creek Road, Raleigh, North Carolina 27607 or (919) 733-3908 for this list.

First determine the type(s) of contaminants expected and the proper analytical method(s) for the contaminants as established in Table 5. The type of sample containers to be used depends on the type of analysis needed. Table 6 lists the typical container, preservation and storage requirements for the specified groundwater analytical methods, however, consult with your selected laboratory for their specific needs and requirements prior to sampling. If proper sampling and QA/QC protocols are not followed, your results may not be considered valid.

Label sample containers prior to sample collection. Each sample label should include the sample location and/or well number, sample identification, the date and time of collection, the analyses to be performed, the preservative added (if any), the sampler's initials, and any other pertinent information for sample identification. Prepare the storage and transport containers (ice chest, etc.) prior to taking any samples so that each collected sample can be placed in an environment chilled to 4 °C immediately after collection.

All sampling equipment (bailers, tubing, containers, etc.) must be selected based on the materials' chemical compatibility with the contaminants potentially present and the source being sampled (e.g., water supply well, monitoring well). All sampling equipment should be thoroughly decontaminated and transported in a manner that does not allow it to become contaminated. Arrangements should be made ahead of time for decontamination of any sampling or measuring equipment that will be reused when taking samples from more than one well. Field decontamination of sampling equipment will be necessary before sampling each well to minimize the risk of cross contamination. Decontamination procedures should be included in reports as necessary.

Table 5 Required Analyses for Contaminated Groundwater

(Laboratories must be certified by the North Carolina DWQ to perform the following methods)

Suspected Contaminant	Analytical Method (See Notes)	Reportable Concentrations
1. Low Boiling Point Fuels: gasoline, aviation gasoline, gasohol, etc.	1. Std. Method 6230D* or 6210D* with IPE & MTBE OR EPA Methods 601 and 602 with IPE, MTBE, EDB* and Xylenes AND 2. Lead (Std. Methods 3030C**prep.)	Any Amount Above the MDL
2. Medium/High Boiling Point Fuels: kerosene, diesel, varsol, mineral spirits, naphtha, jet fuels, fuel oil #2, etc.	1. 602 with Xylenes, AND 2. EPA Method 625***plus 10 largest non-target peaks identified	Any Amount Above the MDL
3. Heavy Fuels: #4, #5, #6 fuel oil; motor oil; hydraulic fluid; etc.	1. 625*** plus 10 largest non-target peaks identified	Any Amount Above the MDL
4. Used/Waste Oil	1. Std. Method 6210D AND 2. 625*** plus 10 largest non-target peaks identified AND 3. Metals (Standard Methods 3030C** prep): Lead and chromium.	Any Amount Above the MDL
5. Metals	1. Metals (Standard Methods 3030C** prep):	Any Amount Above the MDL
6. Solvents: a. Halogenated/Non-Halogenated b. Ethylene Glycol c. Formaldehyde	a. 8260B preferred, 6230D or 6210D b. GC-FID c. Chromatropic Acid Method	Any Amount Above the MDL
7. Non-Petroleum – Unknown	1. Std. Method 6210D*** AND 2. 625***plus 10 largest non-target peaks identified, AND 3. Metals (Standard Methods 3030C** prep)	Any Amount Above The MDL
8. Pesticides	Contact NC Dept. of Agriculture and Consumer Services/Pesticide Section at (919) 733-3556 AND Aquifer Protection Section Regional Office	Not Applicable
9. Substances not covered above	Contact UST Section Regional Office	Not Applicable

- * For identifying EDB, use EPA Method 504.1 initially and at closure.
- ** Total holding time from collection to laboratory filtering is 72 hours.
- *** Once contaminants have been identified by GC/MS methods, more economical compound specific methods may be used. (For example, if no "Acids" were detected by GC/MS Method 625, subsequently analyze by 625 for "Base/Neutrals" only, or use GC Method 610.)

NOTES: (1) *Sample filtration in the field is not permitted for any analyses, and the analytical results of the field-filtered samples will not be accepted by the Department.* (2) *Other comparable EPA-approved methods which target the same constituents and have equivalent or lower detection limits may be used if analyses are conducted by a DWQ-certified laboratory and prior approval is obtained from the appropriate Regional Office.* (3) *For additional analytical methods associated with a Corrective Action Plan under .0106 (k) or (l), see the 2L "Implementation Guidance".* (4) *All MDLs must be at or below the standards as outlined in 15A NCAC 2L if possible.* (5) *For established sites under permit or with existing CAP approval, other analytical methods historically used at the site will be accepted provided the detection limits and list of analytes are similar.*

REFERENCES

- American Public Health Association, American Water Works Association and Water Pollution Control Federation. 1992. *Methods for Determining Organic Compounds in Drinking Water*. Standard Methods for the Examination of Water and Wastewater. U.S. EPA publication number EPA-600/4-79-020 or the most recent edition.
- EPA 500 Series - "Methods for the Determination of Organic Compounds in Drinking Water," US EPA - 600/4-88/039.
- EPA 600 Series -Federal Register, latest EPA approval edition of 40 CFR Part 136. Copies available from: Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954 telephone 202-512-1800.
- Std. Methods 6000 Series -"Standard Methods for the Examination of Water and Wastewater," American Public Health Association, American Water Works Association, and Water Pollution Control Federation, 18th Edition, 1992 or latest EPA-approved edition.
- U.S. EPA. 1984. *Test Procedures for the Analyses of Pollutants under the Clean Water Act*. Federal Register Vol. 49, No. 209, 40 CFR Part 136, October 26, 1984 or the most recent edition.

Table 6 Containers and Preservation for Groundwater Analyses

(Laboratories must be certified by the North Carolina DWQ to perform the following methods)

Sample Type/Method	Container	Preservative	Holding Times
EPA 601/602 SM6210D SM6230D	Duplicate 40-mL VOA vials with Teflon-lined septa screw cap	Add 3 to 4 drops of 1:1 HCl Cool to 4°C	14 days
EPA 625	1-L amber glass with Teflon-lined screw cap	Cool to 4°C	Samples must be extracted within 7 days and extracts analyzed within 40 days.
SM3030C (Metals)	500-mL polyethylene or glass jar	Add 5-mL of 1:1 HNO ₃ (to pH<2) Cool to 4°C Submit to lab within 48 hours of collection	3030C prep within 72 hours of collection and analyze within 6 months of prep.

NOTES: (1) Check with the laboratory that will be doing the analysis for any other requirements, (2) *Some VOA vials may be purchased with preservative already added.

8.3 Groundwater Sample Collection Procedures

A. Water Supply Wells

Water supply well samples should be collected using the existing pump system and should be collected as close to the well head as possible, preferably at the wellhead or at the first spigot on the line. Occasionally, water samples may have to be collected from inside a building or house.

Prior to sample collection, water within the delivery system must be purged. The system should be flushed at the maximum flow rate the spigot will allow, for at least 10 - 15 minutes. Longer running times may be required for large diameter wells or if the well uses a large-capacity water tank (pressure tank). When collecting samples for volatile organic compounds, the flow rate must be reduced after purging to a minimum to avoid aerating the sample during collection.

Information about the construction of the well should be collected. Include the following, as available: depth of well, use of well, well diameter, well yield, screened interval, depth to submersible pump, depth of casing, and static water level.

If residential or public water supply wells are identified within 1500 feet of the discharge, the most imminently threatened should be sampled. If the closest wells are impacted by the release, then more distant wells should be sampled. Copies of the lab report should be submitted to the well user, well owner, appropriate DWM Regional Office, and the local health department.

Questions regarding effects on the health of individuals should be directed to the local health department or the NC Division of Epidemiology at (919) 707-5900. Samples should be analyzed in accordance with groundwater analytical methods specified in Table 5.

Schedules for continued monitoring of threatened water supply wells should be discussed with the appropriate Regional Office of the UST Section.

The groundwater rules (15A NCAC 2L .0106(d)) require responsible parties to provide alternate water to households with contaminated water supplies. Depending on the level of contamination present, municipal water, bottled water, a point-of-entry carbon filtration system, or other alternatives may be necessary. Options for providing a safe source of drinking water should be discussed with the Regional Office.

NOTES: (1) *The appropriate Regional Office of the UST Section should be contacted prior to the abandonment of water supply wells and the connection to municipal water supplies, (2) Water supply wells will not be considered a substitute for monitoring wells.*

B. Monitoring Wells

A pre-established point of known elevation on the highest point of each well casing should be used for every water level measurement. Water level measurements should be measured to the nearest hundredth of a foot prior to any sampling activities.

Measurements made with an electric water level meter will directly indicate the depth to water by emitting an audible and/or visible alarm. When using a steel tape to measure water levels, record the holding mark and the wet level mark from the tape. Do not use colored chalk or other substances on steel tapes. The difference between the holding mark and the wet level mark is the depth to water.

Subtracting the elevation of the static water level from the elevation of the measuring point yields head. If the volume of the well is unknown, subtract the depth to water from the total well depth (feet below the top of casing) in order to determine the length of well section which is filled with water. This length will be used to determine the purge volume.

To avoid cross contamination, all water level measuring equipment must be decontaminated prior to each water level measurement. If water levels must be measured at multiple contaminated wells, begin with the least contaminated well and work toward the most contaminated well.

Wells must be adequately purged prior to sample collection to ensure representation of the aquifer formation water rather than stagnant well water. This may be achieved by purging the well until such time as the field parameters (pH, specific conductivity, and temperature) stabilize, by purging a minimum of three well volumes from the well, or one fully dry purge. Low flow sampling technologies are acceptable as long as the appropriate techniques are employed. See the listed reference publications or the UST Section web site for additional information.

The volume of water contained in a well may be mathematically derived or approximated by multiplying the length of well section containing water (in feet) by one of the following conversion factors based on the diameter of the well casing.

[total well depth (ft) – depth to water (ft)] x [well diameter conversion (gal/ft)] = 1 well volume (gals)

Well Diameter Conversion Table

2" diameter casing = 0.16 gallons per foot
3" diameter casing = 0.37 gallons per foot
4" diameter casing = 0.65 gallons per foot
6" diameter casing = 1.5 gallons per foot
8" diameter casing = 2.6 gallons per foot
10" diameter casing = 4.1 gallons per foot
12" diameter casing = 5.9 gallons per foot

Water samples must be collected within 24 hours of purging. If pumping or bailing the well effectively removes all water within the well, a sample may be collected after recovery, provided that recovery is within 24 hours of purging. **All contaminated purged water must be disposed of in an environmentally sound manner. (see Section 12).**

NOTE: *Muddy or severely turbid samples may be an indication of improper well construction. Analysis from such samples may not be accepted by the Regional Office.*

C. Sample Collection

To prevent accidental contamination during sampling, spread clean plastic sheeting around the well to protect sampling equipment from touching the ground and wear a new pair of disposable gloves.

After wells are purged, collect samples using a positive-displacement bladder pump or bailer. To avoid cross contamination, do not use any equipment in more than one well without proper decontamination prior to reuse. Do not use vacuum systems to collect groundwater samples for volatile contaminants. Documentation of decontamination and sampling procedures must be incorporated into all appropriate reports.

To purge standing well water and to avoid silt locking when sampling by pump, place the pump a few feet below the top of the water column and never set the pump on the bottom of the well. When pumps of any type are used for sampling, the flow rate must be adjusted low enough to fill the sampling jar effectively.

When sampling with a bailer, lower the bailer slowly into the well to avoid aeration of the water or agitation of particulate matter within the well. Retract the bailer slowly and gently empty the sample into the appropriate container until the correct volume has been collected.

When collecting samples for volatile contaminants using a pump or a bailer, a flow rate of less

than 100 mL/min (½ cup/min) is required to fill a VOA vial without aerating the sample. Fill the VOA vial slowly to avoid volatilization of contaminants. Also, pour enough water to create an upper meniscus above the top of the vial; this will help to prevent having air space in the sample vial when it is closed. A gentle tap on the side of the vial may be necessary to loosen any small bubbles. Replace the cap and invert the vial - no bubbles should be present. If a bubble is present do not try more than twice to open the vial and eliminate the bubbles. Collect a new sample if necessary.

8.4 General Decontamination Procedures

Decontamination procedures should be based on the type of sampling equipment being used and the suspected or known contaminants. All equipment used in the field must be thoroughly decontaminated between consecutive measurements to prevent cross-contamination. Documentation of decontamination procedures must be submitted with appropriate reports. Contact the appropriate Regional Office for specific decontamination procedures.

A. Bailer lines

To minimize the possibility of cross-contamination, braided nylon or cotton cord should not be reused, even if cleaned. Teflon coated wire, single strand stainless wire, or other monofilament line can be reused if decontaminated between each use.

B. Pumps

The inside and outside of pumps and reusable hoses/lines must be decontaminated or replaced between use. Ensure that hoses, lines, and exposed gaskets are either constructed of non-reactive materials or replaced between each use.

8.5 Sample Storage and Transport

If necessary, add prescribed preservatives before filling the sample containers. After filling the containers, seal firmly to prevent leakage and store samples for transport in a manner that will prevent breakage. The samples must be kept at a temperature of approximately 4°C following collection. Add ice, if necessary, and promptly transport to a DWQ-certified laboratory. Avoid unnecessary handling of sample containers. Small sample containers which require cooling, such as VOAs, should be placed in self-sealing bags prior to being submerged in ice. Avoid heating (room temperature or above, including exposure to sunlight) or freezing the sample containers. Keep the time between sample collection and delivery to a laboratory to a minimum and be sure that the analytical holding times of your samples are met (see Table 6).

Sample containers must be labeled with the sample location and/or well number, sample identification, the date and time of collection, the analysis to be performed, any preservative added, the sampler's initials, and any other pertinent information for sample identification. The labels should contain a unique identifier (i.e., unique well numbers) that can be traced to the chain-of-custody form.

A chain-of-custody (COC) form must accompany the samples to the laboratory. All blanks on the laboratory form should be completed.

8.6 Laboratory Analytical Methods

The laboratory analyses for potentially contaminated groundwater are listed in Table 5. Due to the complex chemical composition of most petroleum and other groundwater contaminants, the methods listed apply to initial analysis of groundwater for a variety of potential contaminants. It is important to note that once actual contaminant compounds have been identified, there may be less expensive analyses available for investigative and monitoring purposes. Questions regarding analytical methods for site monitoring should be directed to the appropriate Regional Office.

Results of analyses must be compiled in the appropriate report and submitted to the attention of the Regional Groundwater Supervisor at the appropriate Regional Office within 30 days of sample collection, or as specified in your permit if doing compliance monitoring. All compounds analyzed using a certified method must be reported.

8.7 Laboratory Reports

Results of analyses must be compiled in the appropriate report or as specified by a permit and submitted to the appropriate Regional Office. All compounds analyzed using a certified method must be reported. The laboratory report must include the following, all of which should be submitted to the Regional Office in the appropriate reports:

- Laboratory Certification Number
- Facility Name
- Date of Report Preparation
- Chain-of-Custody
- Analytical Result Summary sheets including QA/QC information
- Laboratory Chronicle and Methodology including holding time checks
- Summary of Calibration Information (date calibrated, ranges, etc.)
- Blank Results (method, field, trip, etc.)
- Method Detection Limits

REFERENCES

- Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures; by Puls, Robert W. and Barcelona, Michael J., Office of Research and Development, Washington, DC, December 1995; EPA/540/S-95/504.
- Groundwater Sampling – A Workshop Summary, Dallas, Texas, November 30 – December 2, 1993; Office of Research and Development, Washington, DC, January, 1995; EPA/600/R-94/205.
- Field Comparison of Micro-purging vs. Traditional Groundwater Sampling; by Kearl, Peter M., et al.; in, Groundwater Monitoring Review, Fall 1994, pp. 183-190.
- Low-Flow Purging Reduces Management of Contaminated Groundwater; by, Schilling, Keith E.; Environmental Protection, December 1995, pp. 24-26.

9.0 Site Closure

Site Closure is the termination of regulatory oversight activities related to a discharge. It may occur when information is provided to document that site remediation has achieved the cleanup levels or standards specified by the regulatory agency. 15A NCAC 2L .0106(m) and .0113 outline the procedures for discontinuance of remedial action for sites which have a documented violation of the groundwater standards.

Sites that have been undergoing active remediation can also show that groundwater has been remediated to below groundwater standards. Responsible parties may petition the Department for closure after verification of compliance with standards. Analytical results of groundwater samples collected over four consecutive quarters documenting no contamination above the 15A NCAC 2L standards or interim standards while a remediation system is operational, **and** four quarters after a remediation system has been shut down are generally required.

Closure of sites with soil contamination may be approved by the appropriate Regional Office when documentation is provided that indicates that no soil contaminated in excess of the appropriate action or cleanup levels remains in the ground.

10.0 Contaminated Soil Permits

NC General Statute 143-215.1(d) requires that the disposal and/or *ex situ* treatment of contaminated soil be permitted by the Department of Environment and Natural Resources. The design criteria and minimum requirements for all soil treatment and disposal systems are described at 15A NCAC 2T and 15A NCAC 2L.

NOTE: *Petroleum contaminated soil permit applications originating from UST releases should be submitted to the UST Section in the appropriate Regional Office.*

Table 7 summarizes the general permitting requirements for the storage, treatment and disposal of contaminated soil. This section contains applications for a Certificate of Approval and for a Soil Permit, as well as information concerning other general permitting requirements.

Considerations When Selecting *Ex Situ* Remediation Technologies for Soil

Selection from alternative methods of remediation must take into consideration the nature of the soil contamination, the nature of the soil, and the physical limitations of the remediation site. The targets for soil remediation are generally non-detection of relevant compounds. The following criteria and exclusions apply to this guidance.

- Air Permits - A Division of Air Quality policy (October 1, 1995) does not require permitting or registration of soil treatment procedures except for thermal treatment. Applicants for a permit proposing thermal treatment may be able to take advantage of the "insignificant activity exemption" provided in 15A NCAC 2Q .0102(b)(2)(E)(i), provided the potential emissions of any regulated pollutant are below five tons per year. This air quality policy applies to all areas of North Carolina, including non-attainment areas.
- Criteria for Land Disposal of Petroleum-Contaminated Soil - These guidelines are applicable to disposal of soil, under the provision of NCGS 143-215.1, that is contaminated with one or more of the following petroleum products:
 - (Class I) Low Boiling Point Fuels: Gasoline, Aviation Gasoline, Gasohol, etc.
 - (Class II) Medium/High Boiling Point Fuels: Jet Fuels, Kerosene, Diesel Fuel, Varsol, Mineral Spirits, Naphtha, Fuel Oils (#1 - #6); Motor Oils (New or Used)
- Exclusions - Soil contaminated with the following is generally excluded from coverage under these guidelines:
 - Chlorinated solvents, organic acids or other hazardous waste: For applicable transport and disposal recommendations or requirements, contact the Hazardous Waste Section, Division of Waste Management.
 - Tars and asphalt: High viscosity makes the land disposal of soil containing these products impractical.

- Petroleum refinery sludge: High but variable concentrations of toxic metals and organic compounds require complex preliminary environmental risk assessments and intensive oversight of disposal operations.
- Soil containing non-hazardous waste contaminants where the total volume to be disposed of from any one site or source is less than fifty (50) cubic yards. The disposal is deemed permitted with the issuance of a "Certificate of Approval for Disposal" (see Figure 7); the appropriate Regional Supervisor may require the issuance of a non-discharge permit.

10.1 Types of *Ex Situ* Soil Remediation Technologies

A. Conventional Land Application of Soil Containing Petroleum Contamination with a Soil Volume Less Than 50 Cubic Yards of Contaminated Soil or Up To 100 Cubic Yards if the Application is Minimum Rate.

Land application of this volume or type of contaminated soil may be approved by the DWM through issuance of a "Certificate of Approval for Disposal" (UST-71, see Figure 7). Soil approved for disposal by a Certificate of Approval for Disposal must be land-applied in accordance with required setbacks, Regional Office specifications and incorporated into the receiver site soil. No soil amendments may be required, depending on the type of contaminated soil. A cover crop must be established to prevent soil erosion. Depending on the site conditions and soil contamination characteristics, the appropriate Regional Supervisor may require the issuance of a non-discharge permit.

B. Land Application of Soil Containing Petroleum Contamination

Contaminated soil may be land applied at two thickness rates. A non-discharge permit is required for this activity.

Minimum Rates - Contaminated soil with a soil volume greater than 100 cubic yards is applied at a thickness not to exceed one inch and mixed with the native soil. The permit is valid for one year. The texture of the contaminated soil under consideration must be such that a one inch application is achievable (i.e., granular). No subsequent sampling of soil or groundwater is required. An "Erosion Control Plan" (ECP) is required if more than one acre is affected. The ECP must be attached to the permit application and a separate copy of the ECP should be sent to the Division of Land Resources for approval. Crops for direct human consumption shall not be grown until 12 months following the expiration of the permit.

Conventional Rates – Contaminated soil with a soil volume greater than 50 cubic yards is applied at a thickness not to exceed six (6) inches and mixed with the native soil. Soil amendments such as lime and fertilizer must also be incorporated to provide adequate nutrients for degradation. Land application sites require periodic soil aeration and cover crop establishment. Sites are permitted for 18 months and may be renewed if remediation is not complete. The permit requires periodic soil analysis to assess remediation. An "Erosion Control Plan" (ECP) is required if more than one acre is affected. The ECP must be attached to the permit application and a separate copy of the ECP should be sent to the Division of Land Resources for approval. Crops for direct human consumption shall not be grown until 12 months following the expiration of the permit.

C. Containment and Treatment of Soil Containing Petroleum Contamination Greater than the Action Level

At containment and treatment facilities, petroleum-contaminated soil is accepted and placed on or in a specially designed containment structure. The soil is usually treated using biological additives and/or some type of passive or active venting system. A non-discharge permit is required for these facilities.

Bioremediation and volatilization of the petroleum contamination progresses until the petroleum contamination is less than the action levels. Soil amendments (lime, fertilizer, microorganisms, bulking agents, etc.) may be used to enhance and accelerate the bioremediation process and help to prevent leaching of contaminant hydrocarbon products at low pH conditions. The need for leachate control is dictated by the type of containment and the amount of leachate generated.

D. Thermal Treatment

Soil contaminants may be thermally treated or destroyed by the use of an incinerator. Extreme heat is used to volatilize contaminants. In both stationary and mobile units, an air quality permit may be required.

Measures taken to store and track contaminated soil shall be regulated by the conditions of the permit. In the instance where a mobile unit is used at various locations, the issued permit is valid for the counties within the regulated Regional Office. The permit may stipulate that groundwater monitoring is necessary, depending upon the nature and volume of contaminated soil and groundwater use in the area.

E. Encapsulation

Another widely used treatment method for *ex situ* soil involves the consumption and/or encapsulation of contaminated soil into an end product, usually brick or asphalt. Facilities employing this method of treatment must have a non-discharge permit for this type of disposal and utilization. Design criteria are given in Attachment II of the non-discharge permit application for soil remediation projects.

F. Disposal and Utilization of Soil for Roadbed Construction Projects

Petroleum-contaminated soil may be disposed and utilized for roadbed construction projects provided certain design criteria are met. The road pavement must overhang the contaminated soil in order to prevent infiltration from reaching the contaminated soil. A non-discharge permit will be required for this type of disposal and utilization, and the design criteria are given in Attachment IV of the non-discharge permit application for soil remediation projects.

10.2 Dedicated Sites

Dedicated contaminated soil facilities are designed to receive contaminated soil on a repeated basis. These facilities may use conventional rate land application, production facility storage, or

containment and treatment methodologies. Dedicated facilities may receive contaminated soil from multiple sources that must be individually tracked. They may require additional conditions outside the minimum design requirements associated with one-time use methodologies. Permits for these sites require significant soil, groundwater, and possibly surface water monitoring to ensure protection of human health and the environment. These permits are issued for five years, are renewable, and require the payment of annual administrative fees.

If a disposal facility has previously been approved for a one-time use (including under a Certificate of Approval for Disposal), any subsequent use of that facility *may* require the facility to be re-permitted as a dedicated facility, subject to the guidelines and rules for dedicated facilities.

10.3 Storage of Contaminated Soil

A. Temporary Storage of Contaminated Soil (45 days)

On-site temporary storage must be for less than 45 days and must be in accordance with Figure 6. Authorization for **off-site** temporary storage requires the approval of the appropriate Regional Office and the issuance of a "Certificate of Approval for Disposal" (UST-71) (see Figure 7).

Approval will not be given by the Department, unless:

1. There is a health-based emergency, fire or explosion hazard, or
2. The responsible party has an approved treatment/disposal permit in hand prior to excavating the soil. Unauthorized storage of soil or storage in excess of 45 days may be considered a violation of GS 143-215.1.

Temporary storage of contaminated soil shall be on 10 mil thick plastic and bermed (Figure 6); a plastic cover of at least 10 mil shall be used to prevent runoff and the generation of leachate. Surface water runoff and/or leachate from the contaminated soil storage area must be collected and properly disposed to prevent leachate migration.

B. Storage Inside an Enclosed Structure

An "enclosed structure" for the purposes of these guidelines shall mean a rigid building that contains a roof, four complete sidewalls, and a floor with a hydraulic conductivity of less than or equal to 1×10^{-7} cm/sec [NCAC 15A 2T .1505]. These buildings must be designed to keep surface runoff (i.e., rainwater) from contacting the contaminated soil and producing a leachate or surface water runoff. Because leachate generation is virtually impossible in such a building, no leachate collection or disposal system is required; however, any soil additives that have the potential to generate leachate may require such systems. If outside storage of contaminated soil takes place prior to or after treatment, appropriate measures for storage as specified below shall also apply. **Any contaminated soil stored outside of the structure shall be protected from the environment as described below.** Because enclosed structures tend to concentrate organic vapors, emissions from these facilities may be regulated in accordance with conditions in air quality permit(s).

C. Storage on Impermeable Surfaces Open to the Environment

Containment and treatment other than in an enclosed building will be subject to the elements. Such exposure could result in production of leachate or runoff. Examples include remediation on plastic, remediation under a shed that has no sidewalls, composting operations involving wind rows that are either covered with plastic or uncovered, or other facilities subject to weather as determined by the Division of Waste Management.

Storage of contaminated soil must take place on either a synthetic liner of at least 30 mils thickness, or a one-foot thick liner of natural material, compacted to at least 95% standard proctor dry density with a hydraulic conductivity of less than or equal to 1×10^{-7} cm/sec.

Surface water runoff and/or leachate from the contaminated soil storage area must be collected and properly disposed of to prevent leachate migration. Operators of soil storage facilities with leachate collection systems and treatment facilities must obtain a non-discharge permit. The permit addresses facility construction standards, soil handling procedures, monitoring (both surface and groundwater). An "Erosion Control Plan" (ECP) is required if more than one acre is affected. The ECP must be attached to the permit application and a separate copy of the ECP should be sent to the Division of Land Resources for approval.

In accordance with the definition of Petroleum Contaminated Soil found at 15 A NCAC 2T .1502, soil treated to the action levels but *above the method detection levels* are still considered contaminated. In situations where the permittee anticipates moving the soil upon treating to the action level rather than to non-detection levels, a Certificate of Approval for Disposal will be required (or language incorporated into the permit specifying the use of the soil) prior to its removal.

Refer to the UST Section Web site (<http://wastenotnc.org/ust/main.html>) for the most recent permit applications and general permit conditions for soil remediation permits.

EXHIBIT C

**CITY OF CONCORD
MEDIA POLICY**

CITY OF CONCORD MEDIA POLICY

Purpose

The purpose of this media policy is to provide City personnel with guidelines for interacting with news media, and coordinating media interaction with the City's Public Relations Manager (PRM).

Scope

This policy applies to all departments of the City of Concord. Only the Police and Fire Departments have additional policies and/or procedures for the release of news information.

Policy Overview

It shall be the policy of the City of Concord to maintain and promote open avenues of communication between the City and the news media, and to provide accurate, informed, timely, and relevant information to the press and to the public. City staff is expected to be responsive to media inquiries.

General Policy

Media Interaction

1. City staff is encouraged to check with their department heads before communicating with members of the media. Staff members and department directors should only discuss areas or programs for which they are responsible for or have expertise.
2. City department heads should notify the Public Relations Manager when a reporter has contacted their department about a specific interview. In an interview situation, it is suggested that a department head should contact the Public Relations Manager before speaking with a member of the media. If the situation does not allow the Department Head the opportunity to first contact the Public Relations Manager, a follow up call or email should be sent as an update to the interview. The station identification i.e. Channel 9, reporter's name, and subject matter should be included. Some emergency and after hour events will need immediate attention from the staff.
3. If a reporter contacts an employee for specific fact verification and the reporter has already interviewed the employee in regards to a story, it is not necessary to contact the Public Relations Manager before speaking with the reporter. If an employee has not previously had contact with the reporter and is contacted for fact verification, the employee should seek assistance from the Public Relations Manager, after first contacting their Director or immediate

Supervisor. The Director or Supervisor is the key contact for each department and is responsible for the information disseminated by their key employees. No employee should speak with the media without prior reporting this contact to their Supervisor or Director.

4. If an employee does not know an answer to a reporter's questions is fine to answer, "I don't know, let me get back to you" and then follow up with the reporter.
5. To avoid conflicting messages or confusion, department heads should always contact the Public Relations Manager after they or someone from their department has spoken with the media.
6. When communicating with the media, City staff should be mindful that they are perceived to be acting on behalf of the City. All employees should behave professionally and courteously and avoid editorializing as much as possible.
7. City staff is required to be responsive to the media in a timely fashion. When a member of the media contacts a City employee, it is expected that the employee respond to the reporter as soon as reasonably expected. City employees who may not feel comfortable discussing an issue may choose not to comment on the issue but are also obligated to explain that their choice not to comment is not a reflection of department policy or City policy to avoid communicating with the media. Should such a situation arise, the staff member should contact the Public Relations Manager as soon as possible.
8. In any interview situation, a staff member or department director may decide to refer a member of the media to the Public Relations Manager.

Public Records Request

As a local government entity, the City may receive requests for information. While most business conducted is open to the public, some pieces of information are not public record. In order to avoid confusion and providing private information, employees should take the following steps when they receive a request for information:

1. Should a member of the media or the general public make a request to see something of public record, employees should notify:
 - Public Relations Manager
 - Department Head
 - City Manager
 - City Attorney
2. City staff should advise the requesting party to contact the Public Relations Manager for the information.

3. City employees will not release any records until they have received verification from the Public Relations Manager, City Attorney, and the City Manager that it is acceptable.

Press Releases

1. Press releases should be submitted to the Public Relations Manager for review, approval, and distribution with the exception of Police and Fire. The exception will be those events and situations that are an emergency or need immediate attention. The employee should advise the Department Head or their Supervisor of the press release.
2. Once approved, the Public Relations Manager will be responsible for distribution to the news media. If necessity requires a department to distribute its own news releases, then a courtesy copy should be sent to the Public Relations Manager.
3. All press releases issued should include a contact telephone number as well as an after hours or evening contact telephone number.
4. All press releases should be copied to the Public Relations Manager as well as the Director or Department head.

Insert/Brochures/Letters

The staff should include a copy of any insert, brochure or mass-produced letter to the Public Relations Manager in order for the citywide communication process to have a concise and consistent message and appearance. Approval is dependent on the Department Head, Assistant Manager, Deputy City Manager, and the Public Relations Manager depending on the nature and message being delivered. Most basic information will need only the Department Head and Supervisor's approval. All inserts must be given to the Finance Billing Department with a minimum notice of three weeks.

EXHIBIT D

**CITY OF CONCORD
GENERAL CONDITIONS**

EXHIBIT D
GENERAL CONDITIONS

ARTICLE 1.0 – DEFINITIONS

1.1 Defined Terms:

Wherever used in the Contract Documents and printed with initial or all capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof.

- 1.1.1 **Acceptance** - By the OWNER of the Work as being fully complete in accordance with the Contract Documents subject to waiver of claims.
- 1.1.2 **Addenda** - Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the Contract Documents.
- 1.1.3 **Agreement** - The written instrument which is evidence of the agreement between OWNER and CONTRACTOR covering the work.
- 1.1.4 **Application for Payment** - The form acceptable to ENGINEER which is to be used by CONTRACTOR during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
- 1.1.5 **Asbestos** - Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
- 1.1.6 **Bid** - The offer or proposal of a bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
- 1.1.7 **Bidder** – The one who submits a Bid directly to Owner, as distinct from a sub-bidder who submits a bid directly to a Bidder.
- 1.1.8 **Bidding Documents** - The Bidding Requirements and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).
- 1.1.9 **Bidding Requirements** - The Advertisement or Invitation to Bid, Instructions to Bidders, Bid security form, if any, and the Bid form with any supplements
- 1.1.10 **Bonds** - Performance and payment bonds and other instruments of security.
- 1.1.11 **Change Order** - A document recommended by ENGINEER which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.
- 1.1.12 **Claim** - A demand or assertion by OWNER or CONTRACTOR seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
- 1.1.13 **Contract** – Executed agreement between the OWNER and the successful bidder, covering the performance of the WORK and the compensation therefore. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.
- 1.1.14 **Contract Documents** – The definition of the Contract Documents shall be as set forth in the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Files in electronic media format of text, data, graphics, and the like that may be furnished by OWNER to CONTRACTOR are not Contract Documents.
- 1.1.15 **Contract Price** - The moneys payable by OWNER to CONTRACTOR for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.3 in the case of Unit Price Work).

- 1.1.16 **Contract Times** - The number of days or the dates stated in the Agreement to complete the Work so that it is ready for final payment as evidenced by ENGINEER's written recommendation of final payment.
- 1.1.17 **CONTRACTOR** - The individual or entity with whom OWNER has entered into the Agreement.
- 1.1.18 **Cost of the Work** - See paragraph 11.1.1 for definition.
- 1.1.19 **Drawings** - That part of the Contract Documents prepared approved by ENGINEER which graphically shows the scope, extent, and character of the Work to be performed by CONTRACTOR. Shop Drawings and other CONTRACTOR submittals are not Drawings as so defined.
- 1.1.20 **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.
- 1.1.21 **ENGINEER** – Director of Engineering, City of Concord.
- 1.1.22 **ENGINEER's Consultant** – An individual or entity having a contract with ENGINEER to furnish services as ENGINEER, independent professional associate or consultant with respect to the Project.
- 1.1.23 **Field Order** - A written order issued by ENGINEER which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.
- 1.1.24 **General Requirements** - Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.
- 1.1.25 **Hazardous Environmental Condition** - The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.
- 1.1.26 **Hazardous Waste** - The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
- 1.1.27 **Laws and Regulations; Laws or Regulations** - Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
- 1.1.28 **Liens** - Charges, security interests, or encumbrances upon Project funds, real property, or personal property.
- 1.1.29 **Milestone** - A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.
- 1.1.30 **Notice of Award**- The written notice by OWNER to the apparent successful bidder stating that upon timely compliance by the apparent successful bidder with the conditions precedent listed therein, OWNER will sign and deliver the Agreement.
- 1.1.31 **Notice to Proceed** - A written notice given by OWNER to CONTRACTOR fixing the date on which the Contract Times will commence to run and on which CONTRACTOR shall start to perform the Work under the Contract Documents.
- 1.1.32 **OWNER** – City of Concord, North Carolina.
- 1.1.33 **Partial Utilization** - Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.
- 1.1.34 **PCB's** – Polychlorinated biphenyls
- 1.1.35 **Petroleum** - Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

- 1.1.36 **Project** - The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part as may be indicated elsewhere in the Contract Documents.
- 1.1.37 **Project Manual** - The bound documentary information prepared for bidding and construction the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.
- 1.1.38 **Radioactive Material** - Source, special nuclear, or byproduct material as defined by the atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.
- 1.1.39 **Resident Project Representative** - The authorized representative of ENGINEER who may be assigned to the Site or any part thereof.
- 1.1.40 **Samples** - Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

- 1.1.41 **Shop Drawings** - All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate some portion of the Work.
- 1.1.42 **Site** - Lands or areas indicated in the Contract Documents as being furnished by OWNER upon which the Work is to be performed, including right-of-way and easements for access thereto, and such other lands furnished by OWNER which are designated for the use of CONTRACTOR. .
- 1.1.43 **Specifications** - That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.
- 1.1.44 **Subcontractor** - An individual or entity having a direct contract with CONTRCTOR or with any other Subcontractor for the performance of a part of the Work at the Site.
- 1.1.45 **Substantial Completion** - The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.
- 1.1.46 **Supplementary Condition** - That part of the Contract Documents which amends or supplements these General Conditions.
- 1.1.47 **Supplier** - A manufacturer, fabricator, supplier, distributor, material man, or vendor having a direct contract with CONTRACTOR or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.
- 1.1.48 **Underground Facilities** - All underground pipeline, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic of other control systems.
- 1.1.49 **Unit Price Work** - Work to be paid for on the basis of unit prices.
- 1.1.50 **Work** - The entire completed construction OR the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
- 1.1.51 **Work Change Directive** - A written statement to CONTRACTOR issued on or

after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive 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 Times.

- 1.1.51 **Written Amendment** - A written statement modifying the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the non-engineering or non-technical rather than strictly construction-related aspects of the Contract Documents.
- 1.1.53 **Resident Observer** - Shall have the same definition as "Resident Project Representative" when referred to in these documents or during the duration of the Project.
- 1.1.54 **Written Notice** - The "Notice" as used herein shall mean and include all written notices, demands, instruction, claims, approvals, and disapprovals required to obtain compliance with Contract requirements. Written notice shall be deemed to have been duly served 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 to an authorized representative of such individual, firm or corporation, or if delivered at or sent by registered mail to the last business address known to him who gives the notice. Unless otherwise stated in writing, any notice to or demand upon the OWNER under this Contract shall be delivered to the OWNER through the ENGINEER.

1.2 Terminology

1.2.4 Intent of Certain Terms or Adjectives

.2.1.1 Whenever in the Contract Documents the terms "as allowed", "as approved", or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper", "satisfactory", or adjectives of like effect or import are used to describe an action or determination of ENGINEER as to the Work, it is intended that such action or determination will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in 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 ENGINEER any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of section 9.9 or any other provision of the Contract Documents.

1.2.2 Day

1.2.2.1 The work "day" shall constitute a calendar day or 24 hours measured from midnight to the next midnight.

1.2.3 Defective

1.2.3.1 The word "defective", when modifying the work "Work", refers to Work that is unsatisfactory, faulty, or deficient in that it 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 ENGINEER's recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.4 or 14.5).

1.2.4 Furnish, Install, Perform, Provide

1.2.4.1 The word "furnish", when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

1.2.4.2 The word "install", when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

1.2.4.3 The words "perform" or "provide", when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

1.2.4.4 When "furnish", "install", "perform", or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of CONTRACTOR, "provide" is implied.

1.2.5 Unless stated otherwise in the Contract Documents, words or phrases which have a well known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2.0 – PRELIMINARY MATTERS

2.1 Delivery of Bonds

2.1.1 When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish.

2.2 Copies of Documents

2.2.1 The CONTRACTOR will be furnished without charge up to **five** sets of specifications and full size drawings. Additional sets of drawings and specifications requested by the CONTRACTOR will be furnished at the cost of reproduction, plus handling.

2.3 Commencement of Contract Times: Notice to Proceed

2.3.1 The Contract Time will commence to run on the day indicated in the Notice to Proceed.

2.4 Starting the Work

2.4.1 CONTRACTOR shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.5 Before Starting Construction

- 2.5.1 CONTRACTOR's Review of Contract Documents: Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error, ambiguity, or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless CONTRACTOR knew or reasonably should have known thereof.
- 2.5.2 Preliminary Schedules: Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to ENGINEER for its timely review:
- 2.5.2.1 a preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
 - 2.5.2.2 a preliminary schedule of Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing, and processing such submittal; and
 - 2.5.2.3 a preliminary schedule of values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.
- 2.5.3 Evidence of Insurance: The CONTRACTOR shall submit three copies of his insurance certificate with submittal of his executed Contract Documents. The CONTRACTOR may use the "Accord Form" for the Certificate of Insurance, but the form shall be modified to state that the described insurance policies shall not be canceled without 30 days prior written notice to the OWNER and the ENGINEER by registered mail. CONTRACTOR shall review "Accord Form" before forwarding to the ENGINEER.
- 2.6 Pre-Construction Conference
- 2.6.1. Before any Work at the Site is started, a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in paragraph 2.5.2, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.
- 2.7 Initial Acceptance of Schedules
- 2.7.1 Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to review for acceptability to ENGINEER as provided below the schedules submitted in accordance with paragraph 2.5.2. CONTRACTOR shall have an additional ten days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to CONTRACTOR until acceptable schedules are submitted to ENGINEER.

- 2.7.1.1. The progress schedule will be acceptable to ENGINEER if it provides an orderly progression of the Work to completion within any specified Milestones and the Contract Times. Such acceptance will not impose on ENGINEER responsibility for the progress schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR's full responsibility therefore.
- 2.7.1.2 CONTRACTOR's schedule of Shop Drawing and Sample submittals will be acceptable to ENGINEER if it provides a workable arrangement for reviewing and processing the required submittals.
- 2.7.1.3 CONTRACTOR's schedule of values will be acceptable to ENGINEER as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

2.8 Award

- 2.8.1 The award of the Contract, if it is awarded, will be to the lowest responsive, responsible Bidder whose qualifications indicate the award will be in the best interest of the OWNER and whose Bid complies with all the prescribed requirements. Notice of Award will not be given until the OWNER has concluded such investigations as he deems necessary to establish the responsibility, qualifications, and financial ability of the Bidders to do the Work in accordance with the Contract Documents to the satisfaction of the OWNER within the time prescribed. The OWNER reserves the right to reject the Bid of any Bidder who does not pass such investigation to the OWNER'S satisfaction. In analyzing Bids, the OWNER may take into consideration alternates and unit prices, if requested by the Bid forms. If the Contract is awarded, the OWNER will give the successful Bidder a Notice of Award within 90 days after the opening of Bids.

ARTICLE 3.0 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.1 Intent

- 3.1.1 The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
- 3.1.2 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 labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to OWNER.
- 3.1.3 Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in Article 9.0.

3.2 Reference Standards

- 3.2.1 Standards, Specifications, and Codes.
 - 3.2.1.1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, whether such reference be specific

or by implication, shall mean the standard, specification, manual, or code 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 in the Contract Documents.

3.2.1.2 No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of OWNER, CONTRACTOR, or ENGINEER, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to OWNER, ENGINEER, or any of ENGINEER's Consultants, agents, or employees any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.3 Reporting and Resolving Discrepancies

3.3.1 Reporting Discrepancies

3.3.1.1 If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, CONTRACTOR shall report it to ENGINEER in writing at once. CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as required by paragraph 6.16.1) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.4; provided, however, that CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity, or discrepancy unless CONTRACTOR knew or reasonably should have know thereof.

3.3.2 Resolving Discrepancies

3.3.2.1 Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

3.3.2.1.1 the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents)

3.4 Amending and Supplementing Contract Documents

3.4.1 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: (i) a Written Amendment; (ii) a Change Order; or (iii) a Work Change Directive.

3.4.2 The requirements of the Contract Documents may be supplemented and minor variations and deviations in the Work may be authorized, by one or more of the following ways: (i) a Field Order; (ii) ENGINEER's approval of a Shop Drawing

or Sample; or (iii) ENGINEER's written interpretation or clarification.

3.5 Reuse of Documents

- 3.5.1 CONTRACTOR and any Subcontractor or supplier or other individual or entity performing or furnishing any of the Work under a direct or indirect contract with OWNER: (i) shall not have or acquire any title in or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER or ENGINEER's Consultant, including electronic media editions; and (ii) shall not reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adoption by ENGINEER. This prohibition will survive final payment, completion, and acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude CONTRACTOR from retaining copies of the Contract Documents for record purposes.

ARTICLE 4.0 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

4.1 Availability of Lands

- 4.1.1 OWNER shall furnish the Site. OWNER shall notify CONTRACTOR of any encumbrances or restrictions not of general application but specifically related to use of the Site with which CONTRACTOR must comply in performing the Work. OWNER will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If CONTRACTOR and OWNER are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in OWNER's furnishing the Site, CONTRACTOR may make a Claim therefore as provided in paragraph 10.5.
- 4.1.2 CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.2 Subsurface and Physical Conditions

- 4.2.1 Any testing, reports or drawings which are available or have been relied upon for this project are identified or included in the Special Provisions.
- 4.2.2 Limited Reliance by CONTRACTOR on Technical Data Authorized: CONTRACTOR may rely upon the general accuracy of the technical data. Except for such reliance on such technical data, CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER, or any of ENGINEER's Consultants with respect to:
- 4.2.21 the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, and safety precautions and programs incident thereto; or

- 4.2.2.2 other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
- 4.2.2.3 any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinion, or information.

4.3 Differing Subsurface or Physical Conditions

- 4.3.1 Notice: If CONTRACTOR believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:
 - 4.3.1.1 is of such a nature as to establish that any "technical data" on which CONTRACTOR is entitled to rely as provided in paragraph 4.2 is materially inaccurate; or
 - 4.3.1.2 is of such a nature as to require a change in the Contract Documents; or
 - 4.3.1.3 differs materially from that shown or indicated in the Contract Documents; or
 - 4.3.1.4 is of an unusual nature, and differs materially from condition ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents:

Then CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.1), notify OWNER and ENGINEER in writing about such condition. CONTRACTOR shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

- 4.3.2 ENGINEER's Review: After receipt of written notice as required by paragraph 4.3.1, ENGINEER will promptly review the pertinent condition, determine the necessity of OWNER's obtaining additional exploration or tests with respect thereto, and advise OWNER in writing (with a copy to CONTRACTOR) of ENGINEER's findings and conclusions.
- 4.3.3 Possible Price and Times Adjustments
 - 4.3.3.1 The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in CONTRACTOR's cost of, or time required for, performance of the Work; subject, however, to the following:
 - 4.3.3.1.1 such condition must meet anyone or more of the categories described in paragraph 4.3.1; and
 - 4.3.3.1.2 with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of paragraphs 9.8 and 11.3.
 - 4.3.3.2 CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Contract Times if:
 - 4.3.3.2.1 CONTRACTOR knew of the existence of such conditions at the time CONTRACTOR made a final commitment to OWNER in respect of Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
 - 4.3.3.2.2 the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and

contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to CONTRACTOR's making such final commitment; or

4.3.3.2.3 CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.3.1.

4.3.3.3 If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefore as provided in paragraph 10.5. However, OWNER, ENGINEER, and ENGINEER's consultants shall not be liable to CONTRACTOR for any claims, costs, losses, or damages (including but not limited to all fees and charges of ENGINEERS, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by CONTRACTOR on or in connection with any other project or anticipated project.

4.4 Underground Facilities

4.4.1 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 OWNER or ENGINEER by the OWNERS of such Underground Facilities, including OWNER, or by others.

4.4.1.1 OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and

4.4.1.2 the cost of all of the following will be included in the Contract Price, and CONTRACTOR shall have full responsibility for:

4.4.1.2.1 reviewing and checking all such information and data.

4.4.1.2.2 locating all Underground Facilities shown or indicated in the Contract Documents.

4.4.1.2.3 coordination of the Work with the OWNERS of such Underground Facilities, including OWNER, during construction and

4.4.1.2.4 the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

4.4.2 Not Shown or Indicated

4.4.2.1 If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated reasonable accuracy in the " Contract Documents, CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.1), identify the OWNER of such Underground Facility and give written notice to that OWNER and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility.

4.4.2.2 If ENGINEER concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to

reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, OWNER or CONTRACTOR may make a Claim therefore as provided in paragraph 10.5.

4.5 Reference Points

4.5.1 OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point or property monument 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 or property monuments by professionally qualified personnel.

4.6 Hazardous Environmental Condition at Site

4.6.1 Reports and Drawings: Reference is made to these General Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the site, if any, that have been utilized by the ENGINEER in the preparation of the Contract Documents.

4.6.2 Limited Reliance by CONTRACTOR on Technical Data Authorized: CONTRACTOR may rely upon the general accuracy of the technical data contained in such reports and drawings, but such reports and drawings are not Contract Documents. Except for such reliance on such "technical data", CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER or any of ENGINEER's Consultants with respect to:

4.6.2.1 the completeness of such reports and drawings for CONTRACTOR's purposes,

including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto; or

4.6.2.2 other data, interpretations, opinions and information contained in such reports or

shown or indicated in such drawings; or

4.6.2.3 any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.6.3 CONTRACTOR shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. CONTRACTOR shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by

CONTRACTOR, Subcontractors, Suppliers, or anyone else for whom CONTRACTOR is responsible.

- 4.6.4 If CONTRACTOR encounters a Hazardous Environmental Condition or if CONTRACTOR or anyone for whom CONTRACTOR is responsible creates a Hazardous Environmental Condition, CONTRACTOR shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by paragraph 6.16); and (iii) notify OWNER and ENGINEER (and promptly thereafter confirm such notice in writing). OWNER shall promptly consult with ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such condition or take corrective action, if any.
- 4.6.5 CONTRACTOR shall not be required to resume Work in connection with such condition or in any affected area until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by CONTRACTOR, either party may make a Claim therefore as provided in paragraph 10.5.
- 4.6.6 If after receipt of such written notice CONTRACTOR does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefore as provided in paragraph 10.5. OWNER may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.0.
- 4.6.7 To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, Engineer's Consultants, and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of Engineers, architects, attorneys, and other professionals and all court of arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.6.6 shall obligate CONTRACTOR to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- 4.6.7.1 The provisions of paragraphs 4.2, 4.3, and 4.4 are not intended to apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5.0 – BONDS AND INSURANCE

5.1 Performance and Payment Bonds

- 5.1.1 Concurrent with execution of the Agreement and within ten days of the Notice of Award, the successful CONTRACTOR shall procure, execute, and deliver to the OWNER and maintain, at his own cost and expense, the following bonds, in the forms attached, of a surety company approved by the state in which the Work is being performed as a Surety:
 - 5.1.1.1 Performance Bond - in an amount not less than 100% of the total amount payable to the CONTRACTOR by the terms of the Contract as security for the faithful performance of the Work. Bond must be valid until one year after the date of issuance of the Certificate of Substantial Completion.
 - 5.1.1.2 Payment Bond - in an amount not less than 100% of the total amount payable to the CONTRACTOR by the terms of the Contract as security for the payment of all persons performing labor and furnishing material in connection with the Work. Bond must be valid until one year after the date of issuance of the Certificate of Substantial Completion.
- 5.1.2 All Bonds signed by an agent must be accompanied by a certified copy of the authority to act. Bonds shall 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 Government Financial Operations, U.S. Treasury Department.
- 5.1.3 If the Surety on any Bond furnished by the CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business in the state in which the Work is being performed is revoked, the CONTRACTOR shall, within ten days thereafter, substitute another Bond or Surety, both of which shall be acceptable to the OWNER.

5.2 Insurance Requirements

- 5.2.1 Wherever in this Article the terms "The Insured" and "OWNER" occur with respect to coverage in a policy, it shall mean the OWNER and its agent and agencies, all municipalities where Work is being performed under the Contract, the ENGINEER, and any other parties specifically designated herein, who shall be named as insured in each policy issued. The insurance policies required herein shall not contain any Third Party Beneficiary Exclusion.

The CONTRACTOR shall not commence Work under the Contract until he has obtained all insurance required under this Article and such insurance has been approved by the OWNER, nor shall the CONTRACTOR allow any Subcontractor to commence Work on his subcontract until all similar insurance required of the Subcontractor has been so obtained and approved.

Provision of some types of insurance by a Subcontractor may be waived, at the option of the OWNER, where it is deemed that adequate coverage is provided by the CONTRACTOR's insurance. Subcontractors must, in all cases, provide Workmen's Compensation and Employer's Liability Insurance and Motor Vehicle Liability Insurance.

One copy of each such insurance policy and certificates indicating each type of coverage mentioned, and the correlation between the insurance furnished and that

required, shall be filed with each of The Insured.

All policies relating to this Contract shall be so written that each of The Insured shall be notified by the carrier of cancellation or change at least 30 days prior to the effective date of such cancellation or change. Renewal certificates covering the renewal of all policies expiring during the life of the Contract shall be filed with each of The Insured not less than 30 days before the expiration of such policies.

Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and furnished. The insurance shall provide protection from claims set forth herein which may arise out of or result from Contractor's performance and furnishing of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed or furnished by Contractor, any Subcontractor or Supplier, or 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:

- a. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
- b. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
- c. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
- d. claims for damages insured by personal injury liability coverage which are sustained: (1) by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or (2) by any other person for any other reason;
- e. 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 there from; and
- f. 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.

5.3 General Insurance Requirements

5.3.1 The insurance required to be purchased and maintained by Contractor shall

- a. include at least the specific coverages and be written for not less than the limits of liability specified herein or required by Laws or Regulations, whichever is greater;

- b. include completed operations insurance;
- c. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.12, 6.16, and 6.31 through 6.33 of the General Conditions;
- d. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 30 days' prior written notice has been given to Owner and Engineer;
- e. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work;

- f. with respect to completed operations insurance, and any other insurance coverage written on a claims-made basis, remain in effect for at least 2 years after final payment (and Contractor shall furnish Owner and Engineer evidence satisfactory to Owner of continuation of such insurance at final payment and one year thereafter);
- g. contain a cross liability or severability of interest clause or endorsement. Insurance covering the specified additional insured shall be primary insurance, and all other insurance carried by the additional insured shall be excess insurance; and
- h. with respect to workers' compensation and employers' liability, comprehensive automobile liability, commercial general liability, and umbrella liability insurance, Contractor shall require its insurance carriers to waive all rights of subrogation against Owner, Engineer, and their respective officers, directors, partners, employees, and agents.

5.3.2 Workers' Compensation and Employers' Liability Insurance. This insurance shall protect Contractor against all claims under applicable state workers' compensation laws. Contractor shall also be protected against claims for injury, disease, or death of employees which, for any reason, may not fall within the provisions of a workers' compensation law. This policy shall include an "all states" or "other states" endorsement.
The liability limits shall be not less than:

Workers' compensation	Statutory
Employers' liability	\$1,000,000 each occurrence

5.3.3 Comprehensive Automobile Liability Insurance. This insurance shall be occurrence type written in comprehensive form and shall protect Contractor, and Owner, and Engineer as additional insured, against all claims for injuries to members of the public and damage to property of others arising from the use of

motor vehicles, either on or off the project site whether they are owned, non-owned, or hired.

The liability limits shall be not less than:

Bodily injury and property damage	\$1,000,000 combined single limit for each occurrence
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- 5.3.4 Commercial General Liability Insurance. This insurance shall be occurrence type written in comprehensive form and shall protect Contractor, and Owner, and Engineer as additional insured, against claims arising from injuries, sickness, disease, or death of any person or damage to property arising out of performance of the Work. The policy shall also include personal injury liability coverage, contractual liability coverage, completed operations and products liability coverage, and coverage for blasting, explosion, collapse of buildings, and damage to underground property.

The liability limits shall be not less than:

Bodily injury and property damage	\$1,000,000 combined single limit for each occurrence
	\$1,000,000 general aggregate

- 5.3.5 Umbrella Liability Insurance. This insurance shall protect Contractor, and Owner, and Engineer as additional insured, against claims in excess of the limits provided under workers' compensation and employers' liability, comprehensive automobile liability, and commercial general liability policies. The umbrella policy shall follow the form of the primary insurance, including the application of the primary limits.

The liability limits shall be not less than:

Bodily injury and property damage	\$4,000,000 combined single limit for each occurrence
	\$4,000,000 general aggregate

- 5.3.6 Owner's Protective Liability Insurance. This insurance shall be issued in the name of Owner and shall protect and defend Owner against claims arising as a result of the operations of Contractor or Contractor's Subcontractors.

The liability limits shall be not less than:

Bodily injury and property damage	\$1,000,000 combined single limit for each occurrence
	\$1,000,000 general aggregate

- 5.3.7 Property Insurance. Contractor shall purchase and maintain property insurance coverage for the Work at the site in the amount of the full replacement cost thereof. This insurance shall:

- a. include the interests of Owner, Contractor, Subcontractors, Engineer, and Engineer's Consultants, each of whom is deemed to have an insurable interest and shall be listed as a named insured;

- b. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false-work, Work in transit including ocean transit, and Work in storage at the project site or at another location acceptable to Owner, and shall insure against at least the following perils: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and damage caused by frost and freezing;
- c. cover, in an amount not less than \$100,000, the Owner-furnished equipment and materials to be erected or installed by Contractor;
- d. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects); and
- e. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer, with 30 days' written notice to each other insured.

If Owner requests in writing that other special insurance be included in the property insurance provided by Contractor, Contractor shall, if possible, include such insurance, and the cost thereof will be charged to Owner by appropriate Change Order or Written Amendment. Prior to commencement of the Work at the site, Contractor shall in writing advise Owner whether or not such other special insurance has been procured by Contractor.

5.4 Other Insurance Requirements

- 5.4.1 If any of the property and casualty insurance requirements are not complied with at their renewal dates, payments to the CONTRACTOR will be withheld until these requirements have been met, or at the option of the OWNER, the OWNER may pay the renewal premiums and withhold such payments from any monies due to the CONTRACTOR.
- 5.4.2 In the event that claims in excess of the insured amounts provided herein are filed by reason of any operations under the Contract, the amount of excess of such claims, or any portion thereof, may be withheld from payment due or to become due the CONTRACTOR until such time as the CONTRACTOR shall furnish such additional security covering such claims as may be determined by the OWNER.
- 5.4.3 All policies and certificates of insurance of the CONTRACTOR shall contain the following clauses:
 - 5.4.3.1 insurers shall have no right of recovery or subrogation against the OWNER and its agents and agencies and the ENGINEER, it being the intention of the parties that the insurance policies so effected shall protect both parties and be primary coverage for any and all losses covered by the above-described insurance.

- 5.4.3.2 the clause "other insurance provisions" in a policy in which the OWNER and its agents and agencies and the ENGINEER is named as an insured, shall not apply to these parties.
- 5.4.3.3 the insurance companies issuing the policy or policies shall have no recourse against the OWNER and its agents and agencies and the ENGINEER, for the payment of any premiums or for assessments under any form of policy.
- 5.4.3.4 any and all deductibles in the above-described insurance policies shall be assumed by and be for the amount of, and at the sole risk of the CONTRACTOR.

ARTICLE 6.0 - CONTRACTOR'S RESPONSIBILITIES

6.1 Supervision and Superintendence

- 6.1.1 CONTRACTOR shall supervise, inspect, 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. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of OWNER or ENGINEER in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to see that the complete Work complies accurately with the Contract Documents.
- 6.1.2 At all times during the progress of the Work, CONTRACTOR shall assign a competent resident superintendent thereto who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the Site and shall have authority to act on behalf of CONTRACTOR. All communications given to or received from the superintendent shall be binding on CONTRACTOR.

6.2 Labor; Working Hours

- 6.2.1 CONTRACTOR shall provide competent, suitably qualified personnel to survey, layout, and construct the Work as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the Site.
- 6.2.2 Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday, or any legal holiday without OWNER's written consent (which will not be unreasonably withheld) given after prior written notice to ENGINEER.

6.3 Services, Materials, and Equipment

- 6.3.1 Unless otherwise specified in the General Requirements, CONTRACTOR shall provide and assume full responsibility for all services, 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 performance, testing start-up, and completion of the Work.

- 6.3.2 All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.4 Progress Schedule

- 6.4.1 CONTRACTOR shall adhere to the progress schedule established in accordance with paragraph 2.7 as it may be adjusted from time to time as provided below.

- 6.4.1.1 CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.7) proposed adjustments in the progress schedule that will not result in changing the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

- 6.4.1.2 Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of Article 12.0. Such adjustments may only be made by a Change Order or Written Amendment in accordance with Article 12.0.

6.5 Substitutes and "Or-Equals"

- 6.5.1 Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item equipment or material or equipment of other Suppliers may be submitted to ENGINEER for review under the circumstances described below.

- 6.5.1.1 "Or-Equal" Items: If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal" item, in which case review and approval of the proposed item may, in ENGINEER's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this paragraph 6.5.1.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

- 6.5.1.1.1 in the exercise of reasonable judgment ENGINEER determines that: (i) it is at least equal in quality, durability, appearance, strength, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a

- functioning whole, and;
- 6.5.1.1.2 CONTRACTOR certifies that: (i) there is no increase in cost to the OWNER; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

6.5.1.2 Substitute Items

- 6.5.1.2.1. If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under paragraph 6.5.1.1, it will be considered a proposed substitute item.
- 6.5.1.2.2 CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute. Such information on items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR.
- 6.5.1.2.3 The procedure for review by ENGINEER will be as set forth in paragraph 6.5.1.2.4, as supplemented in the General Requirements and as ENGINEER may decide is appropriate under the circumstances.
- 6.5.1.2.4 CONTRACTOR shall first make written application to ENGINEER for review of a proposed substitute item of material or equipment that CONTRACTOR seeks to furnish or use. The application shall certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not use of a proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute item and whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other CONTRACTORS affected by any resulting change, all of which will be considered by ENGINEER in evaluating the proposed substitute item. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute item.

- 6.5.2 Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly required by the Contract Documents, CONTRACTOR may furnish or

utilize a substitute means, method, technique, sequence, or procedure of construction approved by ENGINEER. CONTRACTOR shall submit sufficient information to allow ENGINEER, in ENGINEER's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in subparagraph 6.5.1.2.

- 6.5.3 ENGINEER's Evaluation: ENGINEER will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraphs 6.5.1 and 6.5.2. ENGINEER will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized until ENGINEER's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal". ENGINEER will advise CONTRACTOR in writing of any negative determination.
- 6.5.4 Special Guarantee: OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute.
- 6.5.5 CONTRACTOR's Expense: CONTRACTOR shall provide all data in support of any proposed substitute for "or-equal" at CONTRACTOR's expense.

6.6 Concerning Subcontractors, Suppliers, and Others

- 6.6.1 CONTRACTOR shall not employ any Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, against whom OWNER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.
- 6.6.2 Within ten days after Notice of Award has been issued, the CONTRACTOR shall furnish to the ENGINEER a list of subcontractors, suppliers, or other persons or organizations who will participate in the Work or furnish principal items of materials and equipment to be utilized in the Work. The list shall include the subcontractors, suppliers, or other persons or organizations indicated on the Bid Form. Within ten days after receipt of the list but prior to the Effective Date of the Agreement, the ENGINEER shall notify the CONTRACTOR in writing if the ENGINEER (or OWNER) has reasonable objection to any subcontractor, suppliers, or other person or organization on the list. Failure by the ENGINEER to object to anyone on the list within the specified time shall constitute acceptance of the subcontractor, supplier, or other person or organization. Acceptance of a subcontractor, supplier, other person or organization named shall not constitute a waiver of the requirements of the contract specifications or the right of the OWNER or ENGINEER to reject defective work. If the ENGINEER (or OWNER) has a reasonable objection as described above, the CONTRACTOR may either (1) submit an acceptable substitute without an increase in his Bid price, or (2) withdraw his Bid without forfeiting his Bid security.
- 6.6.3 CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between

OWNER or ENGINEER and any such Subcontractor, Supplier or other individual or entity, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations. OWNER or ENGINEER may furnish to any such Subcontractor, Supplier, or other individual or entity to the extent practicable, information about amounts paid to CONTRACTOR on account of Work performed for CONTRACTOR by a particular Subcontractor, Supplier, or other individual or entity.

- 6.6.4 CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR.
- 6.6.5 CONTRACTOR shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with ENGINEER through CONTRACTOR.
- 6.6.6 The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- 6.6.7 All Work performed for CONTRACTOR by a Subcontractor shall be pursuant to an appropriate agreement between the CONTRACTOR and Subcontractor. The Subcontractor shall not commence Work until the CONTRACTOR has obtained all insurance as required by Article 5.0, inclusive.
- 6.6.8 The CONTRACTOR shall not subcontract more than 50 percent of the Contract price without prior written approval of the OWNER.

6.7 Patent Fees and Royalties

- 6.7.1 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 OWNER or 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 OWNER in the Contract Documents. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees or agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of ENGINEERS, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.8 Permits

6.8.1 CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. 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. CONTRACTOR shall pay all charges of utility OWNERS for connection to the Work.

6.9 Laws and Regulations

6.9.1 CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.

6.9.2 If CONTRACTOR observes that the Specifications or Drawings are at variance with any Laws or Regulations, he shall give ENGINEER prompt written notice thereof. If CONTRACTOR performs any Work knowing it to be contrary to such Laws or Regulations, and without such notice to ENGINEER, he shall bear all costs arising there from. The CONTRACTOR shall, at all times, observe and comply with and shall cause all his agents and employees and all his Subcontractors to observe and comply with all such existing Laws or Regulations, and shall protect and indemnify the OWNER and the ENGINEER and the municipalities in which Work is being performed, and their officers and agents against any claim or liability arising from or based on the violation of any such Law or Regulation, whether by himself or his employees or any of his Subcontractors.

6.9.3 Changes in Laws or Regulations not adopted or in effect at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work may be the subject of an adjustment in Contract Price or Contract Times. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefore as provided in paragraph 10.5.

6.10 Taxes

6.10.1 CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work. A listing of sales tax paid for the period shall be submitted with each Progress Payment

6.11 Use of Site and Other Areas

6.11.1 Limitation on Use of Site and Other Areas

6.11.1.1 CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. CONTRACTOR shall

assume full responsibility for any damage to any such land or area, or the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

6.11.1.2 Should any claim be made by any such owner or occupant because of the performance of the work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

6.11.1.3 To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultant, and the officers, directors, partners, employees, agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of ENGINEER's, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such OWNER or occupant against OWNER, ENGINEER, or any other party indemnified hereunder to the extent caused by or based upon CONTRACTOR's performance of the Work.

6.11.2 Removal of Debris During Performance of the Work: During the progress of the Work CONTRACTOR shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris, Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

6.11.3 Cleaning: Prior to Substantial Completion of the Work CONTRACTOR shall clean the Site and make it ready for utilization by OWNER. At the completion of the Work CONTRACTOR shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus material and shall restore to original condition all property not designated for alteration by the Contract Documents.

6.11.4 Loading Structures: CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 Record Documents

6.12.1 CONTRACTOR shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to ENGINEER for OWNER. CONTRACTOR is advised that failure to furnish the ENGINEER with accurate and detailed record drawings shall be reason for withholding final payment.

6.13 Safety and Protection

6.13.1 CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall

provide the necessary protection to prevent damage, injury or loss to:

- 6.13.1.1 all persons on the Site or who may be affected by the Work;
- 6.13.1.2 all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
- 6.13.1.3 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.

6.13.2 CONTRACTOR shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and other 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 6.13.1.2 or 6.13.1.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or ENGINEER's Consultant, or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them). CONTRACTOR's duties and responsibilities for safety and for protection of the work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.7.2 that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 Safety Representative

6.14.1 CONTRACTOR shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 Hazard Communication Programs

6.15.1 CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 Emergencies

6.16.1 In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, CONTRACTOR is obligated to act to prevent threatened damage, injury, or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If

ENGINEER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 Shop Drawings and Samples

6.17.1 CONTRACTOR shall submit Shop Drawings to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. CONTRACTOR shall submit four copies of all shop drawings plus the number required for use by the ENGINEER. 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 show ENGINEER the services, materials, and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.17.5.

6.17.2 CONTRACTOR shall also submit Samples to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers, and the use for which intended and otherwise as ENGINEER may require to enable ENGINEER to review the submittal for the limited purposes required by paragraph 6.17.5. CONTRACTOR shall submit three samples plus the number required to be returned to the CONTRACTOR for each sample required.

6.17.3 Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER as required by paragraph 2.7, any related Work performed prior to ENGINEER's review and approval of the pertinent submittal will be at the sole expense and responsibility of CONTRACTOR

6.17.4 Submittal Procedures

- 6.17.4.1 Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:
- 6.17.4.1.1 all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - 6.17.4.1.2 all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;
 - 6.17.4.1.3 all information relative to means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incident thereto; and
 - 6.17.4.1.4 CONTRACTOR shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - 6.17.4.1.5 each Shop Drawing submitted to the ENGINEER must be accompanied by a transmittal which references the applicable section(s) of the specifications. In addition, each Shop Drawing shall be numbered in the order of submittal sequence. All submittals called for in the specifications shall be submitted in the number of copies

as indicated in the Contract Documents.

6.17.4.2 Each submittal shall bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to CONTRACTOR's review and approval of that submittal.

6.17.4.3 At the time of each submittal, CONTRACTOR shall give ENGINEER specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to ENGINEER for review and approval of each such variation.

6.17.5 ENGINEER's Review

6.17.5.1 ENGINEER will timely review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER. ENGINEER's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

6.17.5.2 ENGINEER's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for 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.

6.17.5.3 ENGINEER's review and approval of Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of each submittal as required by paragraph 6.17.4.3 and ENGINEER, has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.17.4.1.

6.17.6 Resubmittal Procedures

6.17.6.1 CONTRACTOR shall make corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. CONTRACTOR shall direct specific attention in writing to revision other than the corrections called for by ENGINEER on previous submittals.

6.18 Continuing the Work

6.18.1 CONTRACTOR shall carry on the Work and adhere to the progress schedule

during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.4 or as OWNER and CONTRACTOR may otherwise agree in writing.

6.19 CONTRACTOR's General Warranty and Guarantee

6.19.1 CONTRACTOR warrants and guarantees to OWNER, ENGINEER, and ENGINEER's Consultants that all Work will be in accordance with the Contract Documents and will not be defective. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

6.19.1.1 abuse, modification, or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, Suppliers, or any other individual or entity for whom CONTRACTOR is responsible; or

6.19.1.2 normal wear and tear under normal usage.

6.19.2 CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents:

6.19.2.1 observations by ENGINEER;

6.19.2.2 recommendation by ENGINEER or payment by OWNER of any progress or final payment;

6.19.2.3 the issuance of a certificate of Substantial Completion by ENGINEER or any payment related thereto by OWNER;

6.19.2.4 use or occupancy of the Work or any part thereof by OWNER;

6.19.2.5 any acceptance by OWNER or any failure to do so;

6.19.2.6 any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by ENGINEER;

6.19.2.7 any inspection, test, or approval by others; or

6.19.2.8 any correction of defective Work by OWNER.

6.20 Indemnification

6.20.1 To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of ENGINEER's, architects, attorneys, and other professionals and all court of arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage:

6.20.1.1 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 there from; and

6.20.1.2 is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any negligence or

omission of an individual or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such individual or entity.

- 6.20.2 In any and all claims against OWNER or ENGINEER or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.20.1 shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for CONTRACTOR or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- 6.20.3 Nothing in the Contract Documents shall create or give to third parties any claim or right of action against the CONTRACTOR, the OWNER or the ENGINEER beyond such as may legally exist irrespective of the Contract.

6.21 Operation and Maintenance Manuals

- 6.21.1 CONTRACTOR shall submit two copies of Operation and Maintenance Manuals for all equipment for review. Upon receipt of approval, six complete sets must be provided. No equipment may be placed into service until the approved manuals are received by the ENGINEER. Instruction manuals shall list all of the equipment specified in this and other sections of the Specifications and shall include equipment serial numbers, design data, operating instructions, maintenance instructions, lubrication instructions, piping, wiring and control diagrams, assembly drawings showing location of parts, part numbers and spare parts list.

ARTICLE 7.0 - OTHER WORK

7.1 Related Work at Site

- 7.1.1 OWNER may perform other work related to the Project at the Site by OWNER's employees, or let other direct contracts therefore, or have other work performance by utility owner. If such other work is not noted in the Contract Documents, then:
 - 7.1.1.1 written notice thereof will be given to CONTRACTOR prior to starting any such other work; and
 - 7.1.1.2 if OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefore as provided in paragraph 10.5.
- 7.1.2 CONTRACTOR shall afford each other CONTRACTOR who is a party to such a direct contract and each utility owner (and OWNER, if OWNER is performing the other work with 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 other work and shall properly coordinate the Work with theirs. Unless otherwise provided in the Contract Documents,

CONTRACTOR shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. 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 ENGINEER and the others whose work will be affected. The duties and responsibility of 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 CONTRACTOR in said direct contracts between OWNER and such utility owners and other CONTRACTORS.

- 7.1.3 If the proper execution or results of any part of CONTRACTOR's Work depends upon work performed by others under this Article 7.0, CONTRACTOR shall inspect such other work and promptly report to ENGINEER in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure to so report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR's Work except for latent defects and deficiencies in such other work.

7.2 Coordination

- 7.2.1 If OWNER intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth:

- 7.2.1.1 the individual or entity who will have authority and responsibility for coordination of the activities between the various CONTRACTORS will be identified;
- 7.2.1.2 the specific matters to be covered by such authority and responsibility will be itemized; and
- 7.2.1.3 the extent of such authority and responsibilities will be provided.

- 7.2.2 OWNER shall have sole authority and responsibility for such coordination.

ARTICLE 8.0 - OWNER'S RESPONSIBILITIES

8.1 Communications to CONTRACTOR

- 8.1.1 Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER. .

8.2 Replacement of ENGINEER

- 8.2.1 In case of termination of the employment of ENGINEER, OWNER shall appoint an ENGINEER to whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER.

8.3 Furnish Data

- 8.3.1 OWNER shall promptly furnish the data required of OWNER under the Contract Documents.

- 8.4 Pay Promptly When Due
 - 8.4.1 OWNER shall make payments to CONTRACTOR promptly when they are due as provided in paragraphs 14.2.3. and 14.7.3.
- 8.5 Lands and Easements; Reports and Tests
 - 8.5.1 OWNER's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1 and 4.5. Paragraph 4.2 refers to OWNER identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by ENGINEER in preparing the Contract Documents.
- 8.6 Insurance
 - 8.6.1 OWNER's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.0.
- 8.7 Change Orders
 - 8.7.1 OWNER is obligated to execute Change Orders as indicated in paragraph 10.3.
- 8.8 Inspections, Tests, and Approvals
 - 8.8.1 OWNER's responsibility in respect to certain inspections, tests, and approvals is set forth in paragraph 13.3.2.
- 8.9 Limitations on OWNER's Responsibilities
 - 8.9.1 The OWNER shall not supervise, direct, or have control or authority over, nor be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the work. OWNER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.
- 8.10 Undisclosed Hazardous Environmental Condition
 - 8.10.1 OWNER's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in paragraph 4.6.
- 8.11 Evidence of Financial Arrangements
 - 8.11.1 If and to the extent OWNER has agreed to furnish CONTRACTOR reasonable evidence that financial arrangements have been made to satisfy OWNER's obligations under the contract Documents, OWNER's responsibility in respect thereof will be as set forth in these General Conditions.

ARTICLE 9.0 - ENGINEER'S STATUS DURING CONSTRUCTION

- 9.1 OWNER's Representative

- 9.1.1 ENGINEER will be OWNER's representative during the construction period and his instructions shall be carried into effect promptly and efficiently.
- 9.2 Project Representative
 - 9.2.1 ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more extensive observation of the Work. The responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in section 9.9.
- 9.3 Clarifications and Interpretations
 - 9.3.1 The ENGINEER will furnish a Resident Project Representative (and assistants) to assist the ENGINEER in observing the performance of the Work. The Resident Project Representative will serve as the ENGINEER's liaison with the CONTRACTOR, working principally through the CONTRACTOR's superintendent to assist him in understanding the intent of the Contract Documents.
 - 9.3.2 The Resident Project Representative shall conduct on-site observations of the Work in progress to confirm that the Work is proceeding in accordance with the Contract Documents. He will verify that tests, equipment and systems start-ups and operating and maintenance instructions are conducted as required by the Contract Documents. He will have the authority to disapprove or reject defective Work in accordance with Article 13.0.
 - 9.3.3 Except upon written instruction of the ENGINEER, the Resident Project Representative:
 - 9.3.3.1 Shall not authorize any deviation from the Contract Documents or approve any substitute materials or equipment.
 - 9.3.3.2 Shall not exceed limitation of ENGINEER's authority as set forth in the Contract Documents.
 - 9.3.3.3 Shall not undertake any of the responsibilities of CONTRACTOR, Subcontractors, or CONTRACTOR's superintendent, or expedite the Work.
 - 9.3.3.4 Shall not advise on or issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the Contract.
 - 9.3.3.5 shall not advise on or issue directions as to safety precautions and programs in connection with the Work.
- 9.4 Authorized Variations in Work
 - 9.4.1 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 Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER and also on CONTRACTOR, who shall perform the Work involved promptly. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of a Field Order, a Claim may be made therefore as provided in paragraph 10.5.

- 9.5 Rejecting Defective Work
- 9.5.1 ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, or that ENGINEER believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER will also have authority to require special inspection or testing of the Works provided in paragraph 13.4, whether or not the Work is fabricated, installed, or completed.
- 9.6 Shop Drawings, Change Orders and Payments
- 9.6.1 In connection with ENGINEER's authority as to Shop Drawings and Samples, see paragraph 6.17.
- 9.6.2 In connection with ENGINEER's authority as to Change Orders, see Articles 10.0, 11.0, and 12.0.
- 9.6.3 In connection with ENGINEER's authorities to Applications for Payment, see Article 14.0.
- 9.7 Determinations for Unit Price Work
- 9.7.1 ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR the ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise).
ENGINEER's written decision thereon will be final and binding (except as modified by ENGINEER to reflect changed factual conditions or more accurate data) upon OWNER and CONTRACTOR, subject to the provisions of paragraph 10.5.
- 9.8 Decisions on Requirements of Contract Documents and Acceptability of Work
- 9.8.1 ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work there under. Claims, disputes and other matters relating to the acceptability of the Work, the quantities and classifications of Unit Price Work, the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, and Claims seeking changes in the Contract Price or Contract Times will be referred to ENGINEER in writing, in accordance with the provisions of paragraph 10.5, with a request for a formal decision.
- 9.8.2 The rendering of a decision by ENGINEER pursuant to this paragraph 9.8 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 14.7) will be a condition precedent to any exercise by OWNER or 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.

9.9 Limitations on ENGINEER's Authority and Responsibilities

- 9.9.1 Neither ENGINEER's authority or responsibility under this Article 9.0 or under any other provision of the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by ENGINEER shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- 9.9.2 ENGINEER will not supervise, direct, contract, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. ENGINEER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.
- 9.9.3 ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- 9.9.4 ENGINEER's review of the final Application for Payment and accompanying documentation and all maintenance and operating instruction, schedules, guarantees, Bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by paragraph 14.7.1 will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with the Contract Documents
- 9.9.5 The limitations upon authority and responsibility set forth in this section 9.9 shall also apply to ENGINEER's Consultants, Resident Project Representative, and assistants.

10.1 Authorized Changes in the Work

- 10.1.1 Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Written Amendment, a Change Order, or a Work Change Directive. Upon receipt of any such document, 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).
- 10.1.2 If OWNER and CONTRACTOR are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefore as provided in paragraph 10.5.

10.2 Unauthorized Change in the Work

- 10.2.1 CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as

provided in paragraph 3.4, except in the case of an emergency as provided in paragraph 6.16 or in the case of uncovering Work as provided in paragraph 13.4.2.

10.3 Execution of Change Orders

10.3.1 OWNER and CONTRACTOR shall execute appropriate Change Orders recommended by ENGINEER (or Written Amendments) covering:

10.3.1.1 changes in the Work which are: (i) ordered by OWNER pursuant to paragraph 10.1.1, (ii) required because of acceptance of defective Work under paragraph 13.8.1 or OWNER's correction of defective Work under paragraph 13.9, or (iii) agreed to by the parties;

10.3.1.2 changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

10.3.1.3 changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 10.5; 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, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.18.1.

10.4 Notification to Surety

10.4.1 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 Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility. The amount of each applicable Bond will be adjusted to reflect the effect of any such change.

10.5 Claims and Disputes

10.5.1 Notice: Written notice stating the general nature of each Claim, dispute, or other matter shall be delivered by the claimant to ENGINEER promptly (but in no event later than 30 days) after the start of the event giving rise thereto. Notice of the amount or extent of the Claim, dispute, or other matter with supporting data shall be delivered to the ENGINEER within 60 days after the start of such event (unless ENGINEER allows additional time for claimant to submit additional or more accurate data in support of such Claim, dispute, or other matter). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of paragraph 12.1.2. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of paragraph 12.2.2. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to ENGINEER and the claimant within 30 days after receipt of the claimant's last submittal (unless ENGINEER allows additional time).

- 10.5.2 ENGINEER's Decision: ENGINEER will render a formal decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any. ENGINEER's written decision on such Claim, dispute, or other matter will be final and binding upon OWNER and CONTRACTOR unless:
- 10.5.2.1 an appeal from ENGINEER's decision is taken within the time limits and in accordance with the dispute resolution procedures set forth in Article 16.0; or
 - 10.5.2.2 if no such dispute resolution procedures have been set forth in Article 16, a written notice of intention to appeal from ENGINEER's written decision is delivered by OWNER or CONTRACTOR to the other and to ENGINEER within 30 days after the date of such decision, and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction within 60 days after the date of such decision or within 60 days after Substantial Completion, whichever ever is later (unless otherwise agreed in writing by OWNER and CONTRACTOR), to exercise such rights or remedies as the appealing party may have with respect to such Claim, dispute, or other matter in accordance with applicable Laws and Regulations.
- 10.5.3 If ENGINEER does not render a formal decision in writing within the time stated in paragraph 10.5.2, a decision denying the claim in its entirety shall be deemed to have been issued 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.
- 10.5.4 No Claim for an adjustment in Contract Price or Contract Times (or Milestones) will be valid if not submitted in accordance with this paragraph 10.5.

ARTICLE 11.0 - COST OF THE WORK; UNIT PRICE WORK

11.1 Cost of the Work

- 11.1.1 Costs Included: The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to CONTRACTOR will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in the 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 11.1.2.
- 11.1.1.1 Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Such employees shall include without limitation superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of 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, worker' compensation, health and retirement benefits, bonuses, sick leave, vacation and

holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by OWNER.

- 11.1.1.2 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 CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.
- 11.1.1.3 Payments made by CONTRACTOR to Subcontractors for Work performed by Subcontractors and all subcontracts shall be subject to the provisions of the Contract Documents.
- 11.1.1.4 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.
- 11.1.1.5 Supplemental costs including the following:
 - 11.1.1.5.1 the proportion of necessary transportation, travel, and subsistence expenses of CONTRACTORS's employees incurred in discharge of duties connected with the Work.
 - 11.1.1.5.2 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 OWNER, 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.
 - 11.1.1.5.3 rentals of all construction equipment and machinery, whether rented from CONTRACTOR or others, shall be negotiated between the ENGINEER and the CONTRACTOR. These rates shall include all fuel, lubricants, insurance, etc. Equipment rental charges shall not exceed the prorated monthly rental rates listed in the current edition of the "Compilation of Rental Rates for Construction Equipment," as published by the Associated Equipment Distributors. Charges per hour shall be determined by dividing the monthly rates by 176. The rental of any such equipment and machinery shall close when the use thereof is no longer necessary for the Work.
 - 11.1.1.5.4 sales, consumer, use, and other similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.
 - 11.1.1.5.5 deposits lost for causes other than negligence of 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.
 - 11.1.1.5.6 losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance of otherwise, sustained by CONTRACTOR in connection with the performance of the Work (except losses and

damages with the deductible amounts of property insurance established in accordance with paragraph 5.6.4), provided such losses and damages have resulted from causes other than the negligence of CONTRACTOR, and 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 OWNER. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR's fee.

- 11.1.1.5.7 the cost of utilities, fuel, and sanitary facilities at the Site.
- 11.1.1.5.8 minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expressage, and similar petty cash items in connection with the Work.
- 11.1.1.5.9 when the Cost of the Work is used to determine the value of a Change Order or of a Claim, the cost of premiums for additional Bonds and insurance required because of the changes in the Work or caused by the event giving rise to the Claim.
- 11.1.1.5.10 when all the Work is performed on the basis of cost-plus, the costs of premiums for all Bonds and insurance CONTRACTOR is required by the Contract Documents to purchase and maintain.

11.1.2 Costs Excluded: The term Cost of the Work shall not include any of the following items:

- 11.1.2.1 Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnerships and sole proprietorships), general managers, engineers, architects, estimators, attorney, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed CONTRACTOR, whether at the Site or in CONTRACTOR's principal or branch office for general administration of the work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.1.1.1 or specifically covered by paragraph 11.1.1.4, all of which are to be considered administrative costs covered by the CONTRACTOR's fee.
- 11.1.2.2 Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the Site.
- 11.1.2.3 Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.
- 11.1.2.4 Costs due to the negligence of 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.
- 11.1.2.5 Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 11.1.1 and 11.1.2.

11.1.3 CONTRACTOR's Fee: When all the Work is performed on the basis of cost-plus,

CONTRACTOR's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, CONTRACTOR's fee shall be determined as set forth in paragraph 12.1.3.

11.1.4 Documentation: Whenever the Cost of the Work for any purpose is to be determined pursuant to paragraphs 11.1.1 and 11.1.2, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

11.3 Unit Price Work

11.3.1 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 unit price 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 CONTRACTOR will be made by ENGINEER subject to the provisions of paragraph 9.8.

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

11.3.3 OWNER or CONTRACTOR may make a Claim for an adjustment in the Contract Price in accordance with paragraph 10.5 if:

- 11.3.3.1 the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
- 11.3.3.2 there is no corresponding adjustment with respect any other item of Work; and
- 11.3.3.3 if CONTRACTOR believes that CONTRACTOR is entitled to an increase in Contract Price as a result of having incurred additional expense or OWNER believes that OWNER is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12.0 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.1 Change of Contract Price

12.1.1 The Contract Price may only be changed by a Changed Order or by a Written Amendment. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the ENGINEER and the other party to the Contract in accordance with provisions of paragraph 10.5.

12.1.2 The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

- 12.1.2.1 where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit price to the

- quantities of the items involved (subject to the provisions of paragraph 11.2); or
 - 12.1.2.2 where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 12.1.3.2); or
 - 12.1.2.3 where the Work involved is not covered by unit price contained in the Contract Documents and agreement to a lump sum is not reached under paragraph 12.1.2.2, on the basis of the Cost of the Work (determined as provided in paragraph 11.1) plus a CONTRACTOR's fee for overhead and profit (determined as provided in paragraph 12.1.3).
- 12.1.3 CONTRACTOR's Fee; The CONTRACTOR's fee for overhead and profit shall be determined as follows:
- 12.1.3.1 a mutually acceptable fixed fee; or
 - 12.1.3.2 if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - 12.1.3.2.1 for costs incurred under paragraphs 11.1.1.1 and 11.1.1.2, the CONTRACTOR's fee shall be 15 percent;
 - 12.1.3.2.2 for costs incurred under paragraph 11.1.1.3, the CONTRACTOR's fee shall be five percent;
 - 12.1.3.2.3 where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of paragraph 12.1.3.2. is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under paragraphs 11.1.1.1 and a11.1.1.2 and that any higher tier Subcontractor and CONTRACTOR will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
 - 12.1.3.2.4 no fee shall be payable on the basis of costs itemized under paragraphs 11.1.1.4, 11.1.1.5, and 11.1.2;
 - 12.1.3.2.5 the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in CONTRACTOR's fee by an amount equal to five percent of such net decrease; and
 - 12.1.3.2.6 when both additions and credit are involved in any one change; the adjustment in CONTRACTOR's fee shall be computed on the basis of the net change in accordance with paragraphs 12.1.3.2.1 through 12.1.3.2.5, inclusive.

12.2 Change of Contract Times

- 12.2.1 The Contract Times (or Milestones) may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Times (or Milestones) shall be based on written notice submitted by the party making the claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.5.

12.2.2 Any adjustment of the Contract Times (or Milestones) covered by a Change Order or of any Claim for an adjustment in the Contract Times (or Milestones) will be determined in accordance with the provisions of this Article 12.0.

12.3 Delays Beyond CONTRACTOR's Control

12.3.1 Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost due to such delay if a Claim is made therefore as provided in paragraph 12.2.1. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by OWNER, acts or neglect of utility owners or other CONTRACTOR's performing work as contemplated by Article 7.0, fires, floods, epidemics, abnormal weather conditions, or acts of God.

12.4 Delays Within CONTRACTOR's Control

12.4.1 The Contract Times (or Milestones) will not be extended due to delays within the control of CONTRACTOR. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.

12.5 Delays Beyond OWNER's and CONTRACTORS's Control

12.5.1 Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay.

12.6 Delay Damages

12.6.1 In no event shall OWNER or ENGINEER be liable to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from:

- 12.6.1.1 delays caused by or within the control of CONTRACTOR; or
- 12.6.1.2 delays beyond the control of both OWNER and CONTRACTOR including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, or acts or neglect by utility OWNER's or other CONTRACTOR's performing other work as contemplated by Article 7.0.

12.6.2 Nothing in this paragraph 12.6 bars a change in Contract Price pursuant to this Article 12.0 to compensate CONTRACTOR due to delay, interference, or disruption directly attributable to actions or in actions of OWNER or anyone for whom OWNER is responsible.

12.7 Abnormal Weather Conditions

12.7.1 Abnormal Weather Conditions for rain shall be derived from the most recent 20-year (minimum) average for the nearest NOAA weather reporting station. The

mean number of days of precipitation per month of 0.10 inch or more shall establish the mean number of weather days for the period.

12.8 Liquidated Damages

12.8.1 The required completion time for the Project is as set forth in the Agreement. The CONTRACTOR is advised that the Contract times stated in the Bid Form are of the essence of the Contract. For each and every day in excess of each Contract time stated in the Bid Form that the CONTRACTOR fails to complete the Work indicated, the CONTRACTOR shall pay to the OWNER the sum stated in the Bid Form as liquidated damages. The said amounts are fixed and agreed upon by and between the CONTRACTOR and the OWNER as an estimate of the actual damages which would be incurred by the OWNER.

ARTICLE 13.0 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.1 Notice of Defects

13.1.1 Prompt notice of all defective Work of which OWNER or ENGINEER has actual knowledge will be given to CONTRACTOR. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.0.

13.2 Access to Work

13.2.1 OWNER, ENGINEER, ENGINEER's Consultants, other representative and personnel of OWNER, independent testing laboratories, and governmental agencies with jurisdictional interest will have access to the Site and the Work at reasonable times for their observation inspecting, and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR's Site safety procedures and programs so that they may comply therewith as applicable.

13.3 Tests and Inspections

13.3.1 CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

13.3.2 OWNER shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

13.3.2.1 for inspections, tests, or approvals covered by paragraphs 13.3.3 and 13.3.4 below;

13.3.2.2 that costs incurred in connection with tests or inspections conducted pursuant to paragraph 13.4.2 shall be paid as provided in said paragraph 13.4.2; and

13.3.2.3 as otherwise specifically provided in the Contract Documents.

13.3.3 If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any Work to be specifically inspected, tested, or approved by some public body, CONTRACTOR shall assume full responsibility therefore, pay all costs in connection therewith and

furnish ENGINEER the required certificates of inspection, testing or approval.

- 13.3.4 The OWNER reserves the right to independently perform at its own expense, laboratory tests on random samples of material or performance tests on equipment delivered to the site. These tests, if made, will be conducted in accordance with the appropriate referenced standards or specification requirements. The entire shipment represented by a given sample, samples or price of equipment may be rejected on the basis of the failure of samples or pieces of equipment to meet specified test requirements. All rejected materials or equipment shall be removed from the site, whether stored or installed in the Work, and the required replacement shall be made, all at no additional cost to the OWNER.
- 13.3.5 If any Work (or the work of others) that is to be inspected, tested, or approved is covered by CONTRACTOR without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation.
- 13.3.6 Uncovering Work as provided in paragraph 13.3.5 shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

13.4 Uncovering Work

- 13.4.1 If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and replaced at CONTRACTOR's expense.
- 13.4.2 If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by other, CONTRACTOR, at ENGINEER's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as 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, CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefore as provided in paragraph 10.5. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a Claim therefore as provided in paragraph 10.05.

13.5 OWNER May Stop the Work

- 13.5.1 If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workmen 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, or if the Work interferes with the operation of the existing facility, the OWNER may order CONTRACTOR to stop, by a written order any Work, or

any portion thereof, until the cause for such order has been eliminated.

13.6 Correction or Removal of Defective Work

13.6.1 CONTRACTOR shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by ENGINEER, remove it from the Project and replace it with Work that is not defective. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

13.7 Correction Period

13.7.1 If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or 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, or if the repair of any damages to the land or areas made available for CONTRACTOR's use by OWNER or permitted by Laws and Regulations as contemplated in paragraph 6.11.1 is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instruction: (i) repair such defective land or areas, or (ii) correct such defective Work or, if the defective Work has been rejected by OWNER, remove it from the Project and replace it with Work that is not defective, and (iii) satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting there from. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or repaired or may have the rejected Work removed and replaced, and all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by CONTRACTOR.

13.7.2 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.

13.7.3 Where defective Work (and damage to other Work resulting there from) has been corrected or removed and replaced under this paragraph 13.7, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed

13.7.4 CONTRACTOR's obligations under this paragraph 13.7 are in addition to any other obligation or warranty. The provisions of this paragraph 13.7 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.8 Acceptance of Defective Work

13.8.1 If, instead of requiring correction or removal and replacement of defective Work, OWNER (and, prior to ENGINEER's recommendation of final payment, ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to OWNER's evaluation of and determination to accept such defective Work (such costs to be approved by ENGINEER as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by CONTRACTOR pursuant to this sentence. If any such acceptance occurs prior to 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 OWNER shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefore as provided in paragraph 10.5. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER.

13.9 OWNER May Correct Defective Work

13.9.1 If CONTRACTOR fails within a reasonable time after written notice from ENGINEER to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.6.1, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days written notice to CONTRACTOR, correct and remedy any such deficiency.

13.9.2 In exercising the rights and remedies under this paragraph, OWNER shall proceed expeditiously. In connection with such corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the Site, take possession of all or part of the Work and suspend CONTRACTOR's services related thereto, incorporate in the Work all materials and equipment stored at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees, OWNER's other CONTRACTOR's, and ENGINEER and ENGINEER's Consultants access to the Site to enable OWNER to exercise the rights and remedies under this paragraph.

13.9.3 All Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by OWNER in exercising the rights and remedies under this paragraph 13.9 will be charged against CONTRACTOR, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, OWNER may make a Claim therefore as provided in paragraph 10.5. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of CONTRACTOR's defective Work.

13.9.4 CONTRACTOR shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the performance of the Work attributable to the exercise by OWNER of OWNER's rights and remedies under this paragraph

13.9.

ARTICLE 14.0 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.1 Schedule of Values

- 14.1.1 The schedule of values established as provided in paragraph 2.5.2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.
- 14.1.2 With the above submittal, the CONTRACTOR shall submit for the ENGINEER's approval, a complete breakdown of all lump sum items in the Proposal. This breakdown, modified where directed by the ENGINEER, will be used as a basis for preparing partial estimates and establishing progress payments.
- 14.1.3 A lump sum payment equal to three percent of the total bid price (to include all bonds, insurance, move-on expenses, etc.) will be allowed for 'mobilization' as a progress payment line item. Up to half of the cost for mobilization will be considered in the initial payment request provided that cost documentation suitable to the ENGINEER is furnished by the CONTRACTOR. Any outstanding balance of mobilization line item will be payable when the Project Work is ten percent complete as indicated by the approved progress payments.

14.2 Progress Payments

14.2.1 Applications for Payments

- 14.2.1.1 The effective ending date of all applications for Progress Payments shall be the 25th day of each month unless mutually agreed upon otherwise. All applications for Progress Payments will be computer-generated based on the Schedule of Values as provided in paragraph 14.1, and submitted in triplicate. The application will be generated each period by the CONTRACTOR.
- 14.2.1.2 Prior to final preparation of each Progress Payment, the CONTRACTOR and Resident Project Representative shall mutually measure and agree upon the quality of Work completed each period.
- 14.2.1.3 Partial payment for materials or equipment properly stored on-site will be made on the basis of the invoice cost of the materials or equipment provided a detailed list of the materials for which partial payment is requested and supporting copies of the invoices is attached to each Application for Progress Payment. As the work progresses, the value of materials not entered into construction will be reduced as materials or equipment are installed. At the completion of the Work, the value of stored materials not entered into construction must be zero.
- 14.2.1.4 The following paragraphs (i & ii) are for construction projects in North Carolina only:
 - 14.2.1.4.1 Sales and Use Tax: With each application for Progress Payment,
CONTRACTOR must furnish a certified and notarized statement setting forth the cost of the property purchased from each vendor and the amount of sales and/or use tax paid thereon. The statement shall show both the N.C. Sales Tax and the County Tax paid and shall list any

payments made directly to the North Carolina Department of Revenue. Tax statements and certification shall be submitted on the forms provided in the Contract Documents. In the event the CONTRACTOR makes several purchases from the same vendor, such certified statement must indicate the invoice numbers, the inclusive dates of the invoices, the total amount of the invoices, and the sales and use taxes paid thereon. Such statement must include the cost of any tangible personal property withdrawn from the CONTRACTOR's warehouse stock and the amount of sales or use tax paid thereon by the CONTRACTOR. Similar certified statements by his subcontractors must be obtained by the prime CONTRACTOR and furnished with the Application for Progress Payment. If no tax has been paid during the pay request period, "NONE" shall be entered on the tax form.

14.2.1.4.2 Use tax may be due on construction equipment brought into North Carolina for use in the performance of contracts (NCGS §105-164.4 and 105-164.6). CONTRACTORS are also liable for payment of applicable privilege licenses (NCGS §105-54) and for payment of applicable franchise, corporate income and withholding taxes (NCGS §105-122, 105-123, 105-134, and 105-163.2).

14.2.1.5 Retainage: Retainage shall be as set forth in the Standard Contract Form or otherwise in the Contract Documents and shall be in compliance with the requirements of Laws and Regulations.

14.2.2 Review of Applications:

14.2.2.1 ENGINEER will, within 10 days after receipt of each Application for Payment, either indicate in writing his approval of payment or return the Application to CONTRACTOR indicating in writing his reasons for refusing to approve payment. In the latter case, CONTRACTOR may make the necessary correction and resubmit the Application. Within 30 days of receiving the submittal of an approvable Application for Payment, the OWNER will make partial payment to the CONTRACTOR on the basis of a duly certified approved estimate of the Work performed during the preceding period by the CONTRACTOR.

14.2.2.2 ENGINEER's recommendation of any payment requested in an Application for Payment will be based on ENGINEER's observations on the Site of the executed Work and on ENGINEER's review of the Application for Payment and the accompanying data and schedules, that to the best of ENGINEER's knowledge, information and belief:

14.2.2.2.1 the Work has progressed to the point indicated;

14.2.2.2.2 the quality of the Work is generally 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 9.8, and to any other qualifications stated in the recommendation); and

14.2.2.2.3 the conditions precedent to CONTRACTOR's being

entitled to such payment appear to have been fulfilled in so far as it is ENGINEER's responsibility to observe the Work. By recommending any such payment ENGINEER will not thereby be deemed to have represented that: (i) inspections made to check the quality or the quantity of the Work as it have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents; or (ii) that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR;

14.2.2.2.4 neither ENGINEER's review of CONTRACTOR's Work for the purposes of recommending payments nor ENGINEER's recommendation of any payment, including final payment, will impose responsibility on ENGINEER to supervise, direct, or control the Work or for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for CONTRACTOR's failure to comply with Laws and Regulations applicable to CONTRACTOR's performance of the Work;

14.2.2.2.5 ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make the representations referred to in paragraph 14.2.2.2. ENGINEER may also refuse to recommend any such payment because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

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

14.2.2.2.5.2 the Contract Price has been reduced by Written Amendment or Change Orders;

14.2.2.2.5.3 OWNER has been required to correct defective Work or complete Work in accordance with paragraph 13.9; or

14.2.2.2.5.4 ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraph 15.2.1.

14.2.3 Payment Becomes Due

14.2.3.1 Thirty days after presentation of the Application for Payment to OWNER with ENGINEER's recommendation, the amount recommended will (subject to the provisions of paragraph 14.2.4) become due, and when due will be paid by OWNER to CONTRACTOR

14.2.4 Reduction in Payment

- 14.2.4.1 OWNER may refuse to make payment of the full amount recommended by ENGINEER because:
 - 14.2.4.1.1 claims have been made against OWNER on account of CONTRACTOR's performance or furnishing of the Work;
 - 14.2.4.1.2 Liens have been filed in connection with the Work, except where CONTRACTOR has delivered a specific Bond satisfactory to OWNER to secure the satisfaction and discharge of such Liens;
 - 14.2.4.1.3 There are other items entitling OWNER to a set-off against the amount recommended; or
 - 14.2.4.1.4 OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.2.2.5.1 through 14.2.2.5.3 or paragraph 15.2.1.
- 14.2.4.2 If OWNER refuses to make payment of the full amount recommended by ENGINEER, OWNER must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action and promptly pay CONTRACTOR any amount remaining after deduction of the amount so withheld. OWNER shall promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, when CONTRACTOR corrects to OWNER's satisfaction the reasons for such action.
- 14.2.4.3 If it is subsequently determined that OWNER's refusal of payment was not justified; the amount wrongfully withheld shall be treated as an amount due as determined by paragraph 14.2.3.1.

14.3 CONTRACTOR's Warranty of Title

- 14.3.1 CONTRACTOR warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporation in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

14.4 Substantial Completion:

- 14.4.1 CONTRACTOR may, in writing to OWNER and ENGINEER, certify that the entire Project is substantially complete and request that ENGINEER issue a certificate of Substantial Completion. Within a reasonable time thereafter, OWNER, CONTRACTOR and ENGINEER shall make an inspection of the Project to determine the status of completion. If ENGINEER and OWNER do not consider the Project substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion and the responsibilities between OWNER and CONTRACTOR for maintenance, heat and utilities. There shall be attached to the certificate a tentative list of items to be completed or corrected before Substantial Completion, and the certificate shall fix the time within which such items shall be completed or corrected, said time to be within Contract Time.
- 14.4.2 OWNER shall have the right to exclude CONTRACTOR from the Site after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

14.5 Partial Utilization:

- 14.5.1 Prior to Substantial Completion of the Project, OWNER may request CONTRACTOR in writing to permit him to use a specified part of the Project

which he believes he may use without significant interference with construction of the other parts of the Project. If CONTRACTOR agrees, he will certify to OWNER and ENGINEER that said part of the Project is substantially complete and request the ENGINEER to issue a certificate of Substantial completion for that part of the Project. Within a reasonable time thereafter, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of that part of the Project to determine its status of completion. If ENGINEER and OWNER do not consider that it is substantially complete, ENGINEER will notify CONTRACTOR in writing giving his reasons therefore. If ENGINEER and OWNER consider that part of the Project to be substantially complete, ENGINEER will execute and deliver to OWNER and CONTRACTOR a certificate to that effect, fixing the date of Substantial Completion as to that part of the Project, attaching thereto a tentative list of items to be completed or corrected before Substantial Completion of the entire Project and fixing the responsibility between OWNER and CONTRACTOR for maintenance, heat, and utilities as to that part of the Project. OWNER shall have the right to exclude CONTRACTOR from any part of the Project which ENGINEER has so certified to be substantially complete, but OWNER shall allow CONTRACTOR reasonable access to complete items on the tentative list.

14.5.2 The CONTRACTOR is specifically advised that payment in full for sections so completed and used by the OWNER will NOT be made until the entire Project has been completed. Partial payments for Work completed and the retainage will be handled on the basis of the ENTIRE Contract Amount as here specified. The CONTRACTOR shall account for this in his Bid and under no circumstances will occupancy and use of completed sections of the Work by the OWNER be considered as grounds for reducing the retainage withheld from the CONTRACTOR's partial payments, or for an increase in the Contract Price.

14.6 Final Inspection

14.6.1 Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will promptly make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measure as are necessary to complete such Work or remedy such deficiencies.

14.7 Final Payment

14.7.1 Application for Payment

14.7.1.1 After CONTRACTOR has, in the opinion of ENGINEER, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in paragraph 6.12), and other documents, CONTRACTOR may make application for final payment following the procedure for progress payments.

14.7.1.2 The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents; (ii) consent of the surety, if any, to final payment; and (iii) complete and legally effective releases or waivers

(satisfactory to OWNER) of all Lien rights arising out of or Liens filed in connection with the Work.

- 14.7.1.3 In lieu of the releases or waivers of Liens specified in paragraph 14.7.1.2 and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full and an affidavit of CONTRACTOR that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER's property might in any way be responsible have been paid or otherwise satisfied.

14.7.2 Review of Application and Acceptance

- 14.7.2.1 If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the Application for Payment to OWNER for payment. At the same time ENGINEER will also give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.9. Otherwise, ENGINEER will return the Application for Payment to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application for Payment.

14.7.3 Payment Becomes Due

- 14.7.3.1 Thirty days after the presentation to OWNER of the Application for Payment and accompanying documentation, the amount recommended by ENGINEER will become due and, when due, will be paid by OWNER to CONTRACTOR.

14.8 Final Completion Delayed

- 14.8.1 If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of 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 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 complete and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application 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.

ARTICLE 15.0 - SUSPENSION OF WORK AND TERMINATION

15.1 OWNER May Suspend Work

15.1.1 At any time and without cause, OWNER may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if CONTRACTOR makes a Claim therefore as provided in paragraph 10.5.

15.2 OWNER May Terminate for Cause

15.2.1 The occurrence of any one or more of the following events will justify termination for cause:

15.2.1.1 CONTRACTOR's persistent failure 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 2.7 as adjusted from time to time pursuant to paragraph 6.4);

15.2.1.2 CONTRACTOR's disregard of Laws or Regulations of any public body having jurisdiction;

15.2.1.3 CONTRACTOR's disregard of the authority of ENGINEER; or

15.2.1.4 CONTRACTOR's violation in any substantial way of any provisions of the Contract Documents.

15.2.2 If one or more of the events identified in paragraph 15.2.1 occur, OWNER may, after giving CONTRACTOR (and the surety, if any) seven days written notice, terminate the services of CONTRACTOR, exclude CONTRACTOR from the Site, and take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case, CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by OWNER arising out of or relating to completing the Work, such excess will be paid to CONTRACTOR. If such claims, costs, losses, and damages exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses, and damages incurred by OWNER will be reviewed by ENGINEER as to their reasonableness and, when so approved by ENGINEER, incorporated in a Change Order. When exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

15.3 OWNER May Terminate For Convenience

15.3.1 Upon seven days written notice to CONTRACTOR, OWNER may, without

cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Contract. In such case, CONTRACTOR shall be paid (without duplication of any items):

15.3.1.1 for completed and acceptable Work executed in accordance with the contract Documents prior to the effective date of termination.

15.3.2 CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.4 CONTRACTOR May Stop Work or Terminate

15.4.1 If, through no act or fault of CONTRACTOR, the Work is suspended for more than 90 consecutive days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within 30 days after it is submitted, or OWNER fails for 30 days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days written notice to OWNER and ENGINEER, and provided OWNER or ENGINEER do not remedy such suspension or failure within that time, terminate the Contract and recover from OWNER payment on the same terms as provided in paragraph 15.3. In lieu of terminating the Contract and without prejudice to any other right remedy, if ENGINEER has failed to act on an Application for Payment within 30 days after it is submitted, or OWNER has failed for 30 days after it is submitted, or OWNER has failed for 30 days to pay CONTRACTOR any sum finally determined to be due, CONTRACTOR may, seven days after written notice to OWNER and ENGINEER, stop the Work until payment is made of all such amounts due CONTRACTOR, including interest thereon. The provisions of this paragraph 15.4 are not intended to preclude CONTRACTOR from making a Claim under paragraph 10.5 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR's stopping the Work as permitted by this paragraph.

15.5 Assignment of Contract

15.5.1 CONTRACTOR shall not assign, transfer, convey or otherwise dispose of the Contract, or of his legal right, title, or interest in or to the same or to any part thereof, without the prior written consent of the OWNER. CONTRACTOR shall not assign by power of attorney or otherwise any monies due him and payable under this Contract without the prior written consent of the OWNER. Such consent, if given, will in no way relieve the CONTRACTOR from any of the obligations of this Contract. OWNER shall not be bound to abide by or observe the requirements of any such assignment.

ARTICLE 16.0 - DISPUTE RESOLUTION

16.1 Methods and Procedures

16.1.1 Dispute resolution methods and procedures, if any, shall be as set forth in these General Conditions, in the Standard Form Contract, or otherwise in the Contract Documents. If no method and procedure has been set forth, and subject to the provisions of paragraph 9.9 and 10.5, OWNER and CONTRACTOR may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

EXHIBIT E

**CITY OF CONCORD
SUPPLEMENTARY CONDITIONS**

EXHIBIT E
SUPPLEMENTARY CONDITIONS

1. SCOPE. These Supplementary Conditions amend or supplement the General Conditions and other provisions of the Contract Documents as indicated herein. All provisions that are not so amended or supplemented remain in full force and effect.

2. DEFINITIONS. Add the following definitions to Article 1 of the General Conditions:

Inspector/Observer - Owner's construction Inspector/Observer employed by Owner, or Observer hired by Owner.

Standard Drawings – North Carolina Department of Transportation Raleigh, “Highway Design Branch Roadway Standard Drawings” Latest edition

Standard Specifications - North Carolina Department of Transportation Raleigh, “Standard Specifications for Roads and Structures”, Latest edition.

3. CONTRACT DOCUMENTS INTENT. Add the following new paragraph immediately after Paragraph 3.2.1.2 of the General Conditions:

3.2.1.3 "The Standard Specifications and Standard Drawings as a whole will govern the construction of the entire Work. The applicable provisions thereof will govern Work to be performed under each section of the Contract."

4. UNDERGROUND FACILITIES. Add the following paragraph to Article 4 of the General Conditions:

4.4.2.3. "Generally, service connections are not indicated on the Drawings. Contractor shall be responsible for discovery of existing underground installations, in advance of excavating or trenching, by contacting all local utilities and by prospecting."

5. BONDS AND INSURANCE. Add the following paragraphs to Article 5 of the General Conditions:

"5.01. Sureties and Insurers; Certificates of Insurance. All Bonds and insurance required by the Contract Documents shall be obtained from surety or insurance companies that are duly licensed or authorized to issue Bonds or insurance policies for the limits and coverages required in the jurisdiction in which the Project is located.

6. OVERTIME WORK. Add the following new paragraphs immediately after Paragraph 6.2 of the General Conditions:

"6.2.3. No Work shall be done between 6:00 p.m. and 7:00 a.m. without permission of Owner. However, emergency work may be done without prior permission.

6.2.4. Night Work may be undertaken as a regular procedure with the permission of Owner; such permission, however, may be revoked at any time by Owner if Contractor

fails to maintain adequate equipment and supervision for the proper prosecution and control of the Work at night."

7. PERMITS. Add the following new paragraph immediately after Paragraph 6.8 of the General Conditions:

'6.8.2. Owner will obtain and pay for the following permits:'

- a. ~~NCDOT Encroachment Agreements~~
- b. ~~Erosion and Sediment Control Plan~~
- c. City of Concord Water Permit – Authorization To Construct
- d. ~~USACE 401/404 Nationwide 12 Permit~~

8. LAWS AND REGULATIONS. Add the following new paragraphs immediately after Paragraph 6.9.3 of the General Conditions:

"6.9.4. Safety and Health Regulations. North Carolina "Occupational Safety and Health Standards for General Industry" shall apply to Work under this contract.

6.9.5. Contract Determination - Debarment. This contract will not be awarded to a Contractor that has been suspended by the State of North Carolina or any agency or department thereof for conviction or indictment or any of the offenses enumerated in G.S. 133-27.

Subcontracts of any tier will not be awarded to a subcontractor (or firm) that has been suspended for conviction or indictment of any of the offenses enumerated in G.S. 133-27.

The Contractor will complete and submit with the bid the certification pertaining to debarment included in the Bid Forms section of this document.

6.9.6. North Carolina License Requirements. Pursuant to Section 87-15, General Statutes of North Carolina, Bidders must show evidence of a North Carolina Contractor's License prior to consideration of their Bids."

9. TAXES. Add the following new paragraph paragraphs immediately after Paragraph 6.10.1 of the General Conditions:

"6.10.2. The Contractor shall, without additional expense to the Owner pay all applicable federal, state, and local taxes of every kind and character, except taxes and assessments on the real property comprising the site of the project, and such taxes shall be considered incidental and included in the total bid.

6.10.3. The Contractor shall submit to the Owner certified proof evidencing the payment of Sales and Use Tax on all materials purchased and tool and equipment rentals paid by the Contractor for governmental projects. The Certified statement shall be on a form acceptable to the Owner and shall itemize such purchases and rentals and the tax paid thereon, and certify that the materials, tools, and equipment were used for this project. Such statements shall be furnished to the Owner in triplicate, monthly, with the partial payments."

10. DOCUMENTATION TO ACCOMPANY APPLICATIONS FOR PAYMENT. Add the following new paragraphs immediately after Paragraph 14.2 of the General Conditions:

"Contractor's Applications for Payment shall be accompanied by the documentation specified herein.

Summary Sheet. Provides partial payment application summary figures and approval signatures.

Contractor's Affidavit. Certifies compliance with Contract Documents and that all previous amounts have been paid for which previous partial payment applications have been submitted.

Tax Statement and Certification. Certifies and summarizes payment of state and local taxes. Requires original signatures and notary seal.

Schedules and Data. During the progress of the Work, each application for Payment shall be accompanied by Contractor's updated schedule of operations, or progress report, with such shop drawings schedules, procurement schedules, value of material on hand included in application, and other data specified in Division 1 or reasonably required by Engineer."

Materials and Equipment. Payments for stored materials and equipment shall be based only upon the actual cost of the materials and equipment to Contractor and shall not include any overhead or profit to Contractor.

Partial payments will not be made for undelivered materials or equipment."

11. FINAL APPLICATION FOR PAYMENT. Add the following new paragraph paragraphs immediately after Paragraph 14.7.1.2 of the General Conditions:

"Consent of the Surety, signed by an agent, must be accompanied by a certified copy of such agent's authority to act for the Surety."

12. DISADVANTAGED BUSINESS ENTERPRISE – Add the following new Article immediately after Article 16.0.

ARTICLE 17.0 – DISADVANTAGED BUSINESS ENTERPRISE

The DBE goal for this project is 10%. The Contractor shall exercise all necessary and reasonable steps to ensure that Disadvantaged Business Enterprises participate in at least the percent of the contract as set forth above as goals for this contract.

Only those DBE firms that are currently certified with the North Carolina Department of Transportation or another North Carolina municipality will be considered acceptable for listing in the bidder submittal of DBE participation.

All DBE forms must be filled out completely. Failure to complete the required forms will cause the bid to be considered nonresponsive and the bid may be rejected.

The apparent lowest responsible, responsive bidder must submit within 72 hours after notification of being low bidder Affidavit C, Affidavit D or Affidavit B as provided in the Bid Forms. Failure to submit these documents is grounds for rejection of the bid.