

SPECIFICATIONS
AND
CONTRACT DOCUMENTS

PHELPS LAKE PARK
City of Rockwall, Texas

MAY 2014

MHS Planning & Design, LLC
212 W. 9th Street
Tyler, Texas 75701
mhs@mhsplanning.com
903-597-6606

PLEASE DO NOT REMOVE ANY PAGES FROM THESE SPECIFICATIONS

TABLE OF CONTENTS

INVITATION TO BID

INSTRUCTIONS TO BIDDERS

BID PROPOSAL

STANDARD FORM OF AGREEMENT

BID BOND

PERFORMANCE BOND

PAYMENT BOND

MAINTENANCE BOND

STATEMENT OF MATERIALS AND OTHER CHARGES

CITY AND OTHERS INDEMNIFIED

CONTRACTORS INSURANCE REQUIREMENTS

CORPORATION ACKNOWLEDGMENT

GENERAL PROVISIONS

TECHNICAL SPECIFICATIONS

SPECIAL PROVISIONS

ADDENDUMS

INVITATION FOR BIDS

The CITY OF ROCKWALL, TEXAS will receive bids for construction of Phelps Lake Park improvements until 2:00 PM, July 17, 2014 at City Hall, 385 South Goliad, Rockwall, Texas 75087. Bids will be publicly opened and read at that time. Pre Bid meeting will be held on July 8, 2014 at 10:00 AM at City Hall Council Chambers.

Bids are invited upon the several items and quantities of work as follows: concrete trail system and twelve stairs, landscaping, kayak launch pier, trail benches, and trash cans.

All quantities are estimated and subject to change.

Contract documents, including drawings and technical specifications, are on file at the office of MHS Planning & Design, and the City of Rockwall Purchasing Office.

One set of proposal, contract, and bonds, plans and specifications may be purchased for \$75.00 at the office of MHS Planning & Design, LLC, 212 W. 9th, Tyler, Texas 75701 (903) 597-6606. The check should be made to MHS Planning & Design, LLC.

Bids shall be accompanied by a cashier's check payable to the order of the CITY OF ROCKWALL in an amount equal to 5% of the total bid. Bid Bonds in lieu of cashier's check will be accepted on sureties licensed to do business in the State of Texas.

Attention is called to the fact that not less than the minimum salaries and wages must be paid on this project, and that the Contractor must ensure that employees and applicants for employment are not discriminated against because of their race, color, religion, sex, or national origin.

The CITY OF ROCKWALL reserves the right to reject any and all bids or to waive any informalities in the bidding.

In order to assure that all potential bidders receive any corrections or addendums to the specifications, an official "Bidder's List" will be maintained in the MHS Planning & Design's office for the project. Any notices on changes in the specifications will be sent to those on the "Bidder's List" and MHS will not be held responsible for those not on the list.

Submitted by:
Lea Ann Ewing, Purchasing Agent
City of Rockwall, TX

INSTRUCTIONS

1. BIDS MUST BE SUBMITTED IN SEALED ENVELOPES, CLEARLY MARKED AS FOLLOWS TO BE ACCEPTED:

Project Name: Phelps Lake Park
City of Rockwall, Texas
Project Number: 2014-1
Name of Bidder: _____
Date of Opening: July 17, 2014
Time of Opening: 2:00 PM

Bids due at City Hall by 2:00 PM, July 17, 2014

Pre Bid Meeting: 10:00 AM, July 8, 2014 in the City Hall Council Chambers, 385 S. Goliad St., Rockwall TX 75087, 972-771-7700

2. "Owner" for this project is the City of Rockwall, Texas.
3. Proposal must be signed by Owner or duly authorized Officer of the firm to be accepted.
4. Bids shall be accompanied by a cashier's check in the amount of 5% of bid. BID BONDS IN LIEU OF CASHIER'S CHECKS WILL BE ACCEPTED ON SURETIES LICENSED TO DO BUSINESS IN TEXAS.
5. Unbalanced bids will not be accepted. All items in the proposal are to be priced including all alternatives. DO NOT FURNISH OFFERS, PROPOSALS, SUBSTITUTIONS OR ALTERNATES OTHER THAN THOSE CALLED FOR IN THE FORM OF PROPOSAL.
6. Bidder shall be responsible for examination of the plans, specifications, and other documents and shall examine project site. Any discrepancy or omissions from plans, specifications or other documents shall be brought to the attention of the Consultant before bids are submitted.
7. Qualified bids cannot be accepted. All Bidders must bid on the same scope of work. If you have questions please call well before bid date so that necessary addenda can be sent out to clarify bid items.

BID PROPOSAL

BID PROPOSAL

Client: City of Rockwall, Texas

Project: Phelps Lake Park

Description: Park Construction

Item #	Quantity/ Unit	Item Description & Written Price	Unit Price	Total
1	Lump Sum (L.S.)	<p>Furnish all labor, tools, equipment, materials and any other requisite necessary to mobilize for the project, including but not limited to insurance, bonds and start-up according to the plans and specifications complete and in place for:</p> <p style="text-align: right;">Dollars</p> <p style="text-align: right;">Cents</p>		
2	L.S.	<p>Furnish all labor, tools, equipment, materials and any other requisite necessary to excavate the site, including but not limited to installation of silt fencing, clearing of vegetation, stockpiling topsoil, cuts, and rough grading according to the plans and specifications complete and in place for:</p> <p style="text-align: right;">Dollars</p> <p style="text-align: right;">Cents</p>		
3	L.S.	<p>Furnish all labor, tools, equipment, materials and any other requisite necessary to construct the concrete trail system (5,800 sqft) and 12 stairs, including but not limited to grading, forming, reinforcing steel, placement and finishing of concrete according to the plans and specifications complete and in place for:</p> <p style="text-align: right;">Dollars</p> <p style="text-align: right;">Cents</p>		

Item #	Quantity/ Unit	Item Description & Written Price	Unit Price	Total
4	L.S.	<p>Furnish all labor, tools, equipment, materials and any other requisite necessary to establish grass in all areas shown on the plans and in any other area of the park where vegetation is disturbed by construction, including but not limited to preparation of soil, seeding, and grow-in according to the plans and specifications complete and in place for:</p> <p>Dollars</p> <p>Cents</p>		
5	L.S.	<p>Furnish all labor, tools, equipment, materials and any other requisite necessary to provide and install the fishing pier, including but not limited to removal of old pier, supports, new pier according to the plans and specifications complete and in place for:</p> <p>Dollars</p> <p>Cents</p>		
6	L.S.	<p>Furnish all labor, tools, equipment, superintendence, materials, and any other requisite necessary to construct the kayak launch pier, including but not limited to excavation, piles, wood deck and kayak launch in accordance with the plans and specifications, complete and in place for:</p> <p>Dollars</p> <p>Cents</p>		

7	L.S.	<p>Furnish all labor, tools, equipment, materials and any other requisite necessary to construct two trail benches, including but not limited to the excavation, reinforced concrete, trash cans and benches according to the plans and specifications complete and in place for:</p> <p style="text-align: right;">Dollars</p> <p style="text-align: right;">Cents</p>		
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Total Base Bid (in numbers) \$ _____

Total Base Bid (written out)

_____ Dollars

_____ Cents

PROPOSAL

Gentlemen:

The undersigned, as bidder, declares that the only person or parties interested in this proposal as principals (excluding subcontractors) are those named herein, that this proposal is made without collusion with any other person, firm, or corporation; that he has carefully examined the form of contract, notice to bidders, specifications, and has carefully examined the location, conditions, and classes of materials called for in the contract and specifications in the manners prescribed therein and according to the requirements of the consultant as therein set forth.

It is agreed that lump sum prices may be increased to cover additional work ordered by the consultant, but not shown on the plans or required by the specifications, in accordance with the provisions of the General Conditions. Similarly, they may be decreased to cover deletion of work so ordered. With this in mind the contractor shall furnish to the consultant the unit prices used to develop lump sum figures within 14 days of contract execution.

The bidder agrees that in the event of a discrepancy between unit price written in words and in numerals that the written words shall govern over numerals and further, that the actual bid shall be the sum of the extensions of unit prices regardless of addition errors in arriving at the total bid.

Accompanying this proposal is a cashier's check or a bid bond in the amount of 5% of the bid payable to the Owner. The bid security accompanying this proposal shall be returned to the bidder, unless in case of the acceptance of the proposal the bidder shall fail to execute a contract and file a performance and a payment bond within fifteen calendar days after its acceptance, in which case the bid security shall become the property of the Owner, and shall be considered as payment for damages due to delay and other inconveniences suffered by the Owner on account of such failure of the bidder. It is understood that the Owner reserves the right to reject any and all bids. It is also understood that the Owner reserves the right to accept or reject informalities in the bid proposal.

The undersigned bidder hereby proposed to perform the following work at the following price to wit:

It is anticipated this project can be complete in 90 consecutive calendar days from the date of issuance of the Notice to Proceed, however, the Contractor shall fill in the amount of time he deems appropriate to complete the contract. It is understood and agreed that the work is to be completed in full within _____ **consecutive calendar days** after issuance of the Notice to Proceed. **The contract time shall be used as a factor in the award process.**

In the event of the award of a contract to the undersigned, the undersigned will BE REQUIRED to furnish a performance bond, payment bond and maintenance bond each for the full amount of the contract, to secure proper compliance with the terms and provisions of the contract, to insure and guarantee payment to all lawful claims for labor performed and materials furnished in the fulfillment of the contract.

The work proposed to be done shall be accepted when fully completed and finished in accordance with the plans and specifications, to the satisfaction of the Consultant.

The undersigned certifies that the bid prices contained in the proposal have been carefully checked and are submitted as correct and final

NOTE: The prices must be shown in words and figures in the proposal in the event of discrepancy, the words shall control.

Receipt is hereby acknowledged of addendum to the contract documents numbered .

MAILING ADDRESS AND CONTACT:

Company Name

Contact Name

Mailing address

City, State, Zip

Email and Telephone #

Federal I.D. Number

During the performance of this contract, the Contractor agrees as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection of training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment notices to be provided by the contracting officer setting forth the provisions of the nondiscrimination clause.
2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
3. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the agency contracting officer, advising the labor union or worker's representative of the Contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

SPECIAL INFORMATION

THIS CONTRACT IS ISSUED BY AN ORGANIZATION WHICH QUALIFIES FOR EXEMPTION PURSUANT TO PROVISIONS OF ARTICLE 20.04 OF THE TEXAS LIMITED SALES EXCISE, AND USE TAX ACT.

THE OWNER WILL ISSUE TO THE SUCCESSFUL BIDDER A TAX EXEMPTION CERTIFICATE FOR ALL MATERIALS WHICH HE MAY FURNISH FOR SAID PROJECT AND THIS TAX SHOULD NOT BE INCLUDED IN THE BID PRICE FOR ANY ITEM IN THE PROPOSAL.

STATE OF TEXAS

COUNTY OF ROCKWALL



PROFESSIONAL SERVICES CONTRACT

Project Name and Number: Phelps Lake Park 2014-1

This Agreement is made and entered into in Rockwall County, Texas, between City of Rockwall, Texas ("CITY"), a municipal corporation and political subdivision of the State of Texas, acting by and through its City Manager and _____ ("CONTRACTOR"), located at _____, Contractor duly licensed and practicing under the laws of the State of Texas.

WHEREAS, CITY desires to engage Contractor as an independent contractor to render certain technical and professional services necessary for performing:

CONSTRUCTION OF IMPROVEMENTS AT PHELPS LAKE PARK

NOW, THEREFORE, for and in consideration of the mutual covenants and agreements contained herein, the Parties hereby agree as follows:

1. Scope of Work

Construction of Improvements at Phelps Lake Park - Rockwall, Texas as shown on Bid Proposal

Contractor agrees to perform Construction services as specifically defined in this Contract as Exhibit "A" the Request for Bid document and bid submittal and any drawings, plans attached hereto and as authorized by CITY. Specifically, Contractor shall perform Professional services as requested by CITY and detailed in Exhibit "A". The Parties by mutual agreement through contract amendments may provide for additional technical and professional services to be performed under the basic general terms and conditions of this Contract. CITY reserves the right to enter into another agreement with other Contractor to provide the same or similar professional services during the term of this Contract for different projects.

2. Compensation & Term of Agreement

Cost for such services will be an amount not to exceed \$ _____ and billed on an hourly basis per rates provided in Exhibit "A". Contractor is not authorized to

perform any work beyond the limited not to exceed amount without authorized written approval by CITY.

The term of this Agreement shall commence upon execution of this agreement and follow the schedule described in Exhibit "A". In the event of termination, Contractor will assist the CITY in arranging a smooth transition process. However, Contractor's obligation to provide services to the CITY will cease upon the effective date of termination, unless otherwise agreed in writing.

3. Method of Payment

CITY shall pay Contractor its fees based on the presentation by Contractor to CITY of a correct statement for all the amounts earned under the Contract together with reasonable supporting documentation verifying the accuracy of the fees and expenses associated with work completed. CITY shall then pay Contractor its fee within thirty (30) days after presentation of the accurate monthly statement by Contractor to CITY. CITY is a State sales and use tax exempt political subdivision of the State of Texas. All records supporting payment shall be kept in the offices of Contractor for a period of not less than three (3) years and shall be made available to CITY for inspection, audit or copying upon reasonable request.

4. Contractor's Standard of Care

Contractor shall provide its services under this Contract with the same degree of care, skill and diligence as is ordinarily provided by a professional Contractor under similar circumstances for a similar project. Contractor represents that it has the capability, experience, available personnel, equipment and means required to perform the services contemplated by this Contract. Services will be performed using personnel and equipment qualified and/or suitable to perform the work requested by the CITY. CITY retains the right to report to Contractor any unsatisfactory performance of Contractor personnel for appropriate corrective action. Contractor shall comply with applicable federal, state, and local laws in connection with any work performed hereunder.

Contractor will seek written CITY approval to accept any contract or perform any services for any person, entity, or business that has an agreement or is in negotiations of an agreement with CITY. CITY may waive this conflict, but such waiver is at CITY's sole discretion and its decision shall be final.

5. Ownership of Documents

As part of the total compensation which CITY has agreed to pay Contractor for the professional services to be rendered under this Contract, Contractor agrees that hard copies of all finished and unfinished documents, data, studies, surveys, drawings, specifications, field notes, maps, models,

photographs, preliminary reports, reports, bonds, bid packet/construction contract documents/advertisement for bids incorporating any CITY standard provisions provided by Contractor, will remain the property of the CITY. Contractor will furnish CITY with paper and electronic copies, to the extent they are available, of all of the foregoing to facilitate coordination, and however, ownership of the underlying work product shall remain the intellectual property of the Contractor. Contractor shall have the right to use such work products for Contractor's purposes. However, such documents are not intended to be suitable for reuse by CITY or others on extension of the Project or on any other project. Any reuse without the express written consent of the Contractor will be at re user's sole risk and without liability or legal exposure to the Contractor, and CITY to the extent allowed by law, shall hold harmless the Contractor from all claims, damages, losses, expenses, and costs, including attorneys' fees arising out of or resulting from the reuse of said documents without the Contractor's consent. The granting of such consent will entitle the Contractor to further compensation at rates to be agreed upon by CITY and the Contractor. The above notwithstanding, Contractor shall retain all rights in its standard drawing details, designs, specifications, databases, computer software and any other proprietary and intellectual property information provided pursuant to this Contract, whether or not such proprietary information was modified during the course of providing the services.

6. Insurance

A. Contractor agrees to maintain Worker's Compensation and Employer's Liability Insurance to cover all of its own personnel engaged in performing services for CITY under this Contract in at least the following amounts:

Workmen's Compensation – Statutory
Employer's Liability – \$100,000.00
Bodily Injury by Disease - \$500,000 (policy limits)
Bodily Injury by Disease - \$100,000 (each employee)

B. Contractor also agrees to maintain Commercial General Liability, Business Automobile Liability, and Umbrella Liability Insurance covering claims against Contractor for damages resulting from bodily injury, death or property damages from accidents arising in the course of work performed under this Contract in not less than the following amounts:

\$2,000,000.00 General aggregate limit

\$1,000,000.00 each occurrence sub-limit for all bodily injury or property damage incurred all in one occurrence \$1,000,000.00 each occurrence sub-limit for Personal Injury and Advertising

C. Contractor shall add CITY, its City Council members and employees, as an additional insured's on all required insurance policies, except worker's compensation, employer's liability and errors and omissions insurance. The Commercial General Liability Policy and Umbrella Liability Policy shall be of an "occurrence" type policy.

D. Contractor shall furnish CITY with an Insurance Certificate on the date this Contract is executed and accepted by CITY, which confirms that all above required insurance policies are in full force and effect.

7. Indemnification

CONTRACTOR SHALL INDEMNIFY AND SAVE HARMLESS THE CITY AND ITS CITY COUNCIL MEMBERS AND EMPLOYEES FROM SUITS, ACTIONS, LOSSES, DAMAGES, CLAIMS, OR LIABILITY, INCLUDING WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, ALL EXPENSES OF LITIGATION, COURT COSTS, AND REASONABLE ATTORNEY'S FEES FOR INJURY OR DEATH TO ANY PERSON, OR INJURY TO ANY PROPERTY, RECEIVED OR SUSTAINED BY ANY PERSON OR PERSONS OR PROPERTY, TO THE EXTENT CAUSED BY THE NEGLIGENT ACTS OF CONTRACTOR OR ITS AGENTS OR EMPLOYEES, IN THE EXECUTION OF PERFORMANCE OF THIS CONTRACT.

CONTRACTOR'S TOTAL LIABILITY TO CITY FOR ANY LOSS OR DAMAGES FROM CLAIMS ARISING OUT OF, OR IN CONNECTION WITH, THIS CONTRACT FROM ANY CAUSE INCLUDING CONTRACTOR'S STRICT LIABILITY, BREACH OF CONTRACT, OR PROFESSIONAL NEGLIGENCE, ERRORS AND OMISSIONS SHALL NOT EXCEED ONE MILLION DOLLARS (\$1,000,000.00). Neither party to this Agreement shall be liable to the other party or any third party claiming through the other respective party, for any special, incidental, indirect, punitive, liquidated, delay or consequential damages of any kind including but not limited to lost profits or use of property, facilities or resources, that may result from this Agreement, or out of any goods or services furnished hereunder.

8. Addresses for Notices and Communications:

CITY
City of Rockwall
Andy Hesser
385 S. Goliad
Rockwall, TX 75087

CONTRACTOR

Representative

Address

All notices and communications under this Contract shall be mailed or delivered to CITY and Contractor at the above addresses.

9. Successors and Assigns

CITY and Contractor each binds itself and its successors, executors, administrators and assigns to the other parties of this Contract and to the successors, executors, administrators and assigns of such other parties, in respect to all covenants of this Contract. Except as noted in the first part of this Paragraph, neither CITY nor Contractor shall assign, sublet or transfer its interest in this Contract without the written consent of the other. Nothing herein shall be construed as creating any personal liability on the part of any officer, council member, employee or agent of any public body which is a party hereto.

10. Termination for Convenience of the Parties

Contractor and CITY may terminate this Contract for their convenience at any time by giving at least thirty (30) days notice in writing to each other. If the Contract is terminated by CITY and/or Contractor as provided herein, Contractor will be paid for the Work provided and expenses incurred up to the termination date, if such final compensation is approved by CITY, in its sole discretion. If this Contract is terminated due to the fault of Contractor, Paragraph 10 hereof, relative to Termination for Cause, shall apply.

11. Changes

CITY may, from time to time, request changes in the Scope of Work of Contractor to be performed hereunder. Such changes, including any increase or decrease in the amount of Contractor's compensation, or time for performance, which are mutually agreed upon by and between CITY and Contractor, shall be incorporated in written amendments to this Contract. Any subsequent contract amendments shall be executed by the City Manager or other authorized representative as designated by the City Manager or City Council.

Any alterations, additions or deletions to the terms of this Contract, including the scope of work, shall be by amendment in writing executed by both CITY and Contractor.

13. Reports and Information

Contractor, at such times and in such forms as CITY may reasonably require, and as specified in the Scope of Work or in additional Contract Amendments shall furnish CITY periodic reports pertaining to the Work or services undertaken pursuant to this Contract, the cost and obligations incurred, or to be incurred in connection therewith, and any other matter covered by this Contract.

14. Entire Agreement

This Contract and its Exhibits and any future Contract Amendments constitute the entire agreement, and supersede all prior agreements and understandings between the parties concerning the subject matter of this Contract.

15. Waiver

The failure on the part of either party herein at any time to require the performance by the other party, of any portion of this Contract, shall not be deemed a waiver of, or in any way affect that party's rights to enforce such provision, or any other provision. Any waiver by any party herein of any provision hereof, shall not be taken or held to be a waiver of any other provision hereof, or any other breach hereof.

16. Severability

The invalidity or unenforceability of any provision of this Contract shall not affect the validity or enforceability of any other provision of this Contract.

17. Survival

Any and all representations, conditions and warranties made by Contractor under this Contract are of the essence of this Contract and shall survive the execution, delivery and termination of it.

18. Governing Powers and Law

Both Parties agree and understand that the City does not waive or surrender any of its governmental powers by execution of this Agreement. To that end, the parties further understand that this agreement shall not be considered a contract for goods or services under Texas Local

Government Code, Section 271.151 and Contractor waives any right or entitlement granted said provisions. This Contract is governed by the laws of the State of Texas and all obligations of the parties under this Contract are performable in Rockwall County, Texas.

19. Attorney's Fees

If it is necessary for either Party herein to file a cause of action at law or in equity against the other Party due to: (a) a breach of this Contract by the other Party and/or (b) any intentional and/or negligent act or omission by the other Party arising out of this Contract, the non-breaching or non-negligent Party shall be entitled to reasonable attorney's fees and costs, and any necessary disbursements, in addition to any other relief to which it is legally entitled.

20. State or Federal Laws

This Contract is subject to all applicable federal and state laws, statutes, codes, and any applicable permits, ordinances, rules, orders and regulations of any local, state or federal government authority having or asserting jurisdiction, but nothing contained herein shall be construed as a waiver of any right to question or contest any such law, ordinance, order, rule or regulation in any forum having jurisdiction.

EXECUTED in triplicate originals on this _____ day of _____ 2014.

ATTEST:

CONTRACTOR:

By: _____

Name: _____

Title: _____

EXECUTED in triplicate originals on this _____ day of _____ 2014.

ATTEST:

City of Rockwall, Texas

Richard Crowley, City Manager

BID BOND

STATE OF TEXAS §

COUNTY OF §

KNOW ALL MEN BY THESE PRESENTS:

That we, the undersigned,
, of the City of _____, County of _____,
State of Texas, as Principal,
and _____, as Surety, are
hereby held and firmly bound unto the City of Rockwall, Texas, as OWNER in the
amount of
Dollars (\$ _____) which represents five percent (5%) of the amount
bid for the payment of which, well and truly to be made, we hereby jointly and severally
bind ourselves, successors and assigns.

The Condition of the above obligation is such that whereas the Principal has submitted
to The City of Rockwall, County of Rockwall, State of Texas, a certain BID, attached
hereto and hereby made a part hereof to enter into a contract in writing for construction
of improvements at Phelps Lake Park.

NOW THEREFORE:

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

then this obligation shall be void, otherwise the same shall remain in force and effect; it
being expressly understood and agreed that the liability of the Surety for any and all

PAYMENT BOND

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That

_____, State of Texas, as Principal, and _____

(\$ _____) for payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, by these present:

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that the said Principal shall pay all claimants supplying labor and materials to him or a subcontractor in the prosecution of the work provided for in said contract, then this obligation shall be void; otherwise to remain in full force and effect;

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

Surety or Attorney-in-Fact

Local Recording Agent
Insurance Board

By: _____

Title:

Addr:

Addr:

202

con

Sworn to and subscribed before me this the _____ day of _____, 2014 by .
(Surety or Attorney-in-Fact).

(seal)

Notary Public in and for the
State of Texas

STATE OF TEXAS

§

COUNTY OF _____

§

Sworn to and subscribed before me this the ____ day of _____, 2014, by _____
(Local Recording Agent).

(seal)

Notary Public in and for the
State of Texas

Principal

By: _____
Name

Title: _____

Address: _____

A POWER OF ATTORNEY FROM THE SURETY-IN-FACT TO THE RESIDENT SURETY
MUST BE ATTACHED.

PERFORMANCE BOND

STATE OF TEXAS §
COUNTY OF §

KNOWN ALL MEN BY THESE PRESENTS:

That _____, of the City of _____, County of _____ State of Texas, as Principal, and _____, authorized under the law of the State of Texas to act as Surety on bonds for Principals, are held and firmly bound unto the City of Rockwall, (Owner), in the penal sum of

(\$_____) for payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, by these present:

WHEREAS, the Principal has entered into a certain written contract with the Owner, dated the ____ day of _____, 2014, to construct improvements at Phelps Lake Park which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that the said Principal shall faithfully perform said contract and shall in all respects duly and faithfully observe and perform all and singular the covenants, conditions and agreements in and by said contract agreed and covenanted by the Principal to be observed and performed, and according to the true intent and meaning of said Contract and the Plans and Specifications hereto annexed, then this obligation shall be void; otherwise to remain in full force and effect;

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Chapter 2253, Texas Government Code, as amended and all liabilities on this bond shall be determined in accordance with the provisions of said Article to the same extent as if it were copied at length herein,

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

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this _____ day of _____, 2014.

Surety or Attorney-in-Fact

Registered with State

Local Recording Agent
Insurance Board

By: _____
Title: _____
Address _____

By: _____
Title: _____
Phys _____

STATE OF TEXAS

§

COUNTY OF _____ §

Sworn to and subscribed before me this the _____ day of _____, 2014, by _____
(Surety or Attorney-in-Fact).

(seal)

Notary Public in and for the
State of Texas

STATE OF TEXAS

§

COUNTY OF _____ §

Sworn to and subscribed before me this the _____ day of _____, 2014, by _____
(Local Recording Agent).

(seal)

Notary Public in and for the
State of Texas

(Company)

Principal

By: _____

Title: _____

Address: _____

A POWER OF ATTORNEY FROM THE SURETY-IN-FACT TO THE RESIDENT SURETY
MUST BE ATTACHED.

MAINTENANCE BOND

STATE OF TEXAS

§

COUNTY OF

§

KNOWN ALL MEN BY THESE PRESENTS: That _____, of the City of _____ County of _____, State of Texas, as Principal, and _____

, authorized under the law of the State of Texas to act as Surety on bonds for Principals, are held and firmly bound unto the City of Rockwall, Texas (Owner), in the penal sum of _____ for payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, by these present:

WHEREAS, the Principal has entered into a certain written contract with the City of Rockwall, Texas, dated the _____ day of _____, 2014 to construct improvements as described in the Standard Form of Agreement, which Agreement is hereby referred to and made part thereof as fully and to the same extent as if copied at length herein.

WHEREAS, under the plans, specifications and contract, it is provided that the Contractor will maintain and keep in good repair the work herein contracted to be done for a period of one (1) year from the date of written acceptance of said work and to do all necessary repairing and/or reconstructing in whole or in part of said improvements that should be occasioned by settlement of foundation, defective workmanship or materials furnished in the construction of any part thereof, or any of the accessories thereto constructed by the Contractor. Be it understood that the purpose of this section is to cover all defective conditions arising; by reason of defective material or workmanship and charge the same against the said Contractor and Surety on this obligation, and the said Contractor and Surety herein shall be subject to the liquidation damages mentioned in said contract for each day's failure on it's part to comply with the terms of said provisions of said contract.

NOW, THEREFORE, if the said Contractor shall keep and perform it's said agreement to maintain said work and keep the same in repair for the said maintenance period of one (1) year, as provided, then these presents shall be null and void and have no further effect. If default shall be made by the said Contractor in the performance of it's contract to so maintain and repair said work, then these presents shall have full force and effect and said Owner shall have and recover damages from the said Contractor and it's Principal and Surety. It is further agreed that this obligation shall be continuing one against the Principal and Surety herein, and that successive recoveries may be had hereon for successive breaches until the full amount shall have been exhausted. It is further understood that the obligation herein to maintain said work shall continue throughout said maintenance period and the same shall not be changed, diminished or in any manner affected from any cause during said time.

PROVIDED, the aggregate liability of Surety hereunder is limited to the penal sum of this bond.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this _____ day of _____, 2014.

Surety or Attorney-in-Fact

Registered with State

Local Recording Agent
Insurance Board

By: _____
Title: _____
Address _____

By: _____
Title: _____
Phys _____

STATE OF TEXAS

§

COUNTY OF _____

§

Sworn to and subscribed before me this the _____ day of _____, 2014, by _____ (Surety or Attorney-in-Fact).

(seal)

Notary Public in and for the
State of Texas

STATE OF TEXAS

§

COUNTY OF _____

§

Sworn to and subscribed before me this the _____ day of _____, 2014, by _____ (Local Recording Agent).

(seal)

Notary Public in and for the
State of Texas

Principal

By: _____
Title: _____
Address: _____

A POWER OF ATTORNEY FROM THE SURETY-IN-FACT TO THE RESIDENT SURETY MUST BE ATTACHED.

STATEMENT OF MATERIALS AND OTHER CHARGES

City of Rockwall, Texas

Phelps Lake Park Project

In order for consumable materials and those incorporated into the work to be sales tax free to the Owner, the Contractor shall separate the bid as follows:

Consumable and Incorporated Materials and Equipment: \$ _____

All other Materials, Equipment, and Services
provided by the Contractor \$ _____

* TOTAL: \$ _____

* This total must agree with the total figure
shown in the bid documents including any
alternates applicable.

NOTE: ONLY THE COPY OF THIS FORM IN THE BOUND
CONTRACT DOCUMENT IS TO FILLED OUT.

CITY AND OTHERS INDEMNIFIED

STATUTES TO BE COMPLIED WITH:

CONTRACTOR covenants and agrees to FULLY INDEMNIFY and HOLD HARMLESS, the OWNER and the CONSULTANT, elected officials, employees, officers, and representatives of the OWNER and the CONSULTANT, individually or collectively, from and against any and all costs, claims, liens, damages, losses, expenses, fees, fines, penalties, proceedings, actions, demands, causes of action, liability and suits of any kind and nature, including but not limited to, personal or bodily injury, death and property damage, made upon the OWNER directly or indirectly arising out of, resulting from or related to CONTRACTOR's negligent acts or omissions of CONTRACTOR, any agent, officer, director, representative, employee, consultant or subcontractor of CONTRACTOR while in the exercise of performance of the rights or duties under this Agreement, all without however, waiving any governmental immunity available to the OWNER under Texas Law and without waiving any defenses of the parties under Texas Law.

CONTRACTOR agrees to comply with the Workman's' Compensation Act of the State of Texas and to pay or cause to be paid all compensation, medical or hospital bills which may become due or payable thereunder, and to protect and indemnify CITY from and against any and all liability by reason of injury to employees of the Contractor. Contractor shall furnish CITY with a Certificate from its Insurance Carrier evidencing Contractor's compliance therewith.

PROJECT: Phelps Lake Park - Rockwall, Texas

DATE: _____

(Signature)

WITNESS MY SIGNATURE, this the ____ day of _____, 2014.

STATE OF TEXAS §

COUNTY OF _____ §

BEFORE ME, the undersigned authority, on this day personally appeared _____, Owner of _____, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he signed the same for the purposes and consideration therein expressed.

(seal)

Notary Public in and for the

My commission expires: _____

CONTRACTOR'S INSURANCE REQUIREMENTS

The Contractor before starting work must furnish to the Owner certificates of insurance or other acceptable evidences from reputable insurance companies licensed to write insurance in the State of Texas, showing that the contractor is covered by the insurance as follows:

In the event any work is sublet, the Contractor shall require the subcontractor similarly to provide the same coverage and shall himself acquire evidence of such coverage on behalf of the subcontractor.

1. Commercial General Liability Insurance: Limits for bodily injury of not less than \$500,000/\$1,000,000 and for property damage of not less than \$500,000. The policy shall be on the commercial general liability form and including contractual liability coverage.
2. Business Automobile Liability Insurance: Limits for bodily injury liability of not less than \$250,000/\$500,000 and for property damage of not less than \$100,000, on all self-propelled vehicles not covered by the General Liability Insurance used in connection with the contract, whether owned, non-owned or hired.
3. All Risk Builder's Risk Insurance or Installation Floater: This policy insures all materials, supplies, machinery, equipment, fixtures, and temporary structures, including foundation, the property of the contractor, or for which the contractor may be liable, to be used in or incidental to the construction, fabrication, installation, erection, repair, alteration, or completion of Owner's facilities being constructed under this contract including the interest of any subcontractor.
4. Statutory Workmens' Compensation and Employer's Liability Insurance
5. Owner's and Contractor's Protective Liability: Limits not less than those for Commercial General Liability.

The Owner shall be notified by the Contractor and Insurance company at least 30 days prior to any changes in coverage including limits, locations, hazards or any other alteration materially affecting this contract. Should coverage be canceled or reduced below the required limits the Contractor shall immediately stop work until coverage can be reinstated and new certificates of coverage provided.

STATE OF TEXAS ©

COUNTY OF _____

BEFORE ME, the undersigned authority in and for _____ County, Texas, on this day personally appeared _____, Owner of _____, known to me to be the same person and officer whose name is subscribed to the foregoing instrument and acknowledged to me that the same was the act of the said Texas corporation, and that he/she executed the same as the act of such corporation for the purposes and consideration therein expressed, and in the capacity therein state.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the _____ day of _____, 2014.

Notary Public in and for the State of Texas Type or Print Notary's Name

My Commission Expires: _____

GENERAL PROVISIONS AND REQUIREMENTS

GENERAL PROVISIONS AND REQUIREMENTS INDEX

(Non-Federally Funded Work)

<u>Item 1 - Definition of Terms</u>	<u>Page</u>
1.1 Definition of Terms.....	1
1.2 Advertisement.....	1
1.3 Owner.....	1
1.4 Consultant.....	1
1.5 Inspector.....	1
1.6 Bidder.....	1
1.7 Contractor.....	1
1.8 Superintendent.....	1
1.9 Surety.....	1
1.10 Right-of-Way.....	1
1.11 Proposal.....	1
1.12 Bidder's Guaranty.....	1
1.13 Special Provisions.....	1
1.14 Plans.....	1
1.15 Specifications.....	2
1.16 Contract.....	2
1.17 Performance Bond.....	2
1.18 The Work.....	2
1.19 Working Day.....	2
1.20 Calendar Day.....	2
 <u>Item 2 - Instruction to Bidders</u>	 <u>Page</u>
2.1 Proposal Form.....	2
2.2 Quantities in Proposal Form.....	2
2.3 Examination of Plans, Specifications and Site Work.....	2
2.4 Preparation of Proposal.	3
2.5 Bid Time for Construction.....	3
2.6 Non-Responsive Proposals.....	3
2.7 Proposal Guaranty.....	3
2.8 Filing of Proposals.....	3
2.9 Withdrawing Proposals.....	3
2.10 Disqualification of Bidders.....	4
2.11 Opening Proposals.....	4
2.12 Sales Tax Exemption.....	4
2.13 Tie Breakers.....	4
2.14 Alternates.....	4
2.15 Substitutions Prior to Award.....	4
 <u>Item 3 - Award and Execution of Contract</u>	 <u>Page</u>
3.1 Consideration of Bids.....	5
3.2 Award of Contract.....	5

3.3	Return of Bidder's Guaranty.....	5
3.4	Contract Bonds.....	5
3.5	Execution of Contract.....	6
3.6	Failure to Execute Contract.....	6
3.7	Beginning of Work.....	6
3.8	Substitution of Materials and Equipment After Award.....	6

<u>Item 4 - Scope of Work</u>	<u>Page</u>
-------------------------------	-------------

4.1	Intent of Plans and Specifications.....	6
4.2	Special Provisions.....	7
4.3	Increased or Decreased Quantities of Work.....	7
4.4	Alteration of Plans and Specifications.....	7
4.5	Extra Work.....	7
4.6	Final Clean-Up.....	7

<u>Item 5 - Control of the Work</u>	<u>Page</u>
-------------------------------------	-------------

5.1	Authority of the Consultant.....	7
5.2	Conformity with Plans.....	7
5.3	Existing Structures.....	7
5.4	Coordination of Plans, Specifications, Proposals and Special Provisions.....	8
5.5	Cooperation of Contractors.....	8
5.6	Construction Stakes.....	8
5.7	Authorities and Duties of Inspectors.....	8
5.8	Inspection.....	8
5.9	Removal of Defective and Unauthorized Work.....	9
5.10	Final Inspection.....	9
5.11	Job Shack.....	9

<u>Item 6 - Control of Materials</u>	<u>Page</u>
--------------------------------------	-------------

6.1	Source of Supply of Materials.....	9
6.2	Samples and Tests of Materials.....	9
6.3	Storage of Materials.....	9
6.4	Defective Materials.....	10
6.5	Arrangement and Charge for Water Furnished by Owner.....	10
6.6	Other Utilities.....	10
6.7	Approved Equals.....	10
6.8	Installation Supervision.....	10
6.9	Operation and Maintenance Manuals.....	11
6.10	Buy American.....	11
6.11	Shop Drawing Review.....	11
6.12	Standards.....	11

<u>Item 7 - Legal Relations and Public Responsibility</u>	<u>Page</u>
---	-------------

7.1	Laws to be Observed.....	11
-----	--------------------------	----

7.2	Permits and Licenses.....	11
7.3	Patented Devices, Materials and Processes.....	11
7.4	Sanitary Provisions.....	11
7.5	Public Conveniences and Safety.....	12
7.6	Privileges of Contractor in Streets, Alleys, and Right-of Ways.....	12
7.7	Railroad Crossings.....	12
7.8	Barricades, Lights and Watchmen.....	12
7.9	Use of Explosives.....	13
7.10	Protection and Restoration of Property.....	13
7.11	Responsibility for Damage Claims.....	13
7.12	Contractor's Claim for Damages.....	13
7.13	Public Utilities and Other Property to be Changed.....	14
7.14	Use of a Section or Portion of the Work.....	14
7.15	Contractor's Responsibility for the Work.....	14
7.16	No Waiver of Legal Right.....	14
7.17	Contractor's Insurance.....	14
7.18	Prevailing Wages.....	15
7.19	Owner Indemnified.....	15

Item 8 - Prosecution and Progress

Page

8.1	Schedule.....	15
8.2	Sub-letting the Work.....	15
8.3	Assignment of Contract.....	15
8.4	Prosecution of the Work.....	16
8.5	Limitation of Operations.....	16
8.6	Character of Workmen and Equipment.....	16
8.7	Computation of Contract Time for Completion.....	16
8.8	Failure to Complete on Time.....	16
8.9	Suspension by Court Order.....	17
8.10	Temporary Suspension.....	17
8.11	Suspension of Work and Annulment of Contract.....	17
8.12	Termination of Contract.....	18

Item 9 - Measurement and Payment

Page

9.1	Measurement of Quantities.....	18
9.2	Scope of Payment.....	19
9.3	Payment for Extra Work.....	19
9.4	Partial Estimates.....	19
9.5	Final Acceptance.....	20
9.6	Final Payment.....	20
9.7	General Guaranty.....	20
9.8	Payments Withheld.....	20
9.9	Itemized Breakdown of Bid.....	21

ITEM 1 - DEFINITION OF TERMS

1.1 DEFINITION OF TERMS: Wherever the words, forms or phrases defined herein or pronouns used in their place occur in these specifications, in the contract, in the bonds, in the advertisement, or any other document or instrument herein contemplated, or to which these specifications apply or may apply, the intent and meaning shall be interpreted as follows.

1.2 ADVERTISEMENT: All of the legal publication pertaining to the work contemplated under the contract.

1.3 OWNER: City of Rockwall, Texas

1.4 CONSULTANT: MHS Planning & Design, LLC, 212 W. 9th Street, Tyler, TX 75701, its employees, duly authorized supervisors, or inspectors. (903.597.6606 - mhs@mhsplanning.com)

1.5 INSPECTOR: The authorized representative of the Consultant or the owner assigned to supervise or inspect any or all parts of the work and the materials to be used therein.

1.6 BIDDER: Any person, persons, partnership, company, firm, association or cooperation acting directly or through a duly authorized representative submitting a proposal for the work contemplated.

1.7 CONTRACTOR: Any person, persons, partnership, company, firm, association or cooperation entering into contract for the execution of the work, acting directly or through a duly authorized representative, the party of the second part.

1.8 SUPERINTENDENT: The authorized representative of the Contractor.

1.9 SURETY: The corporate body which is bound with the Contractor as a guarantee of good faith on the part of the Contractor to execute the work in strict accordance with plans, specifications and terms of the contract.

1.10 RIGHT-OF-WAY: Land provided by a public governing body upon which to construct the proposed work or to gain access to work situated on private land.

1.11 PROPOSAL: The written statement duly filed with the Owner by the person, persons, partnership, company, firm, association, or corporation proposing to do the work contemplated, including the approved form on which the formal bids for the work are to be prepared.

1.12 BIDDER'S GUARANTY: The security designated in the advertisement and proposal, to be furnished by each bidder as a guarantee of good faith to enter into a contract with the Owner and execute the required bonds for the work contemplated after the work is awarded to him.

1.13 SPECIAL PROVISIONS: The special clauses setting forth conditions or requirements peculiar to the specific project involved, supplementing the standard specifications, and taking precedence over any conditions or requirements of the standard specifications with which they are in conflict.

1.14 PLANS: All the drawings pertaining to the contract and made a part thereof, including such supplementary drawings or addenda as the Consultant may issue in order to clarify other drawings, or

for the purpose of showing changes in the work hereinafter authorized, or for showing details not shown thereon.

1.15 SPECIFICATIONS: The directions, provisions and requirements contained herein or in a special specifications, supplemented by such "Special Provisions" and "Supplemental Agreements" a may be issued or made pertaining to the methods and manner of performing the work or to quantities and qualities of materials to be furnished under the contract. Where the phrases, "Or directed by the Consultant", "Ordered by the Consultant", or "To the satisfaction of the Consultant" occur, it is to be understood that the directions, orders, or instructions to which they relate are within the limitations of the proposal and specifications. "Special Provisions" will cover work pertaining to a particular project and included in the proposal but not covered by the specifications and will govern and take precedence over specifications wherever in conflict therewith. "Supplemental Agreements" are written agreements entered into between the Contractor and the Owner and approved by the Surety, covering alterations and changes in plans which are necessary to the proper completion of the work.

1.16 CONTRACT: The written agreement covering the performance of the work. The contract includes the advertisement, proposal, specifications, including special provisions, plans or working drawings and any supplemental changes or agreements pertaining to the work or materials therefor and bonds.

1.17 PERFORMANCE BOND: The security furnished by the Contractor and Surety as a guarantee on the part of the Contractor to execute the work in accordance with the terms of the contract.

1.18 THE WORK: All work, including the furnishing of labor, materials, tools, equipment, and incidentals, to be performed by the Contractor under the terms of the contract.

1.19 WORKING DAY: A working day is defined as a calendar day, not including Saturdays, Sundays or legal holidays, in which weather or other conditions not under the control of the Contractor will permit the performance of the principal unit of work under way for a continuous period of not less than seven hours between 7:00 a.m. and 6:00 p.m.

1.20 CALENDAR DAY: Any day of the week, month and year; no days being excluded for any reason.

ITEM 2 - INSTRUCTION TO BIDDERS

2.1 PROPOSAL FORM: The Owner will furnish bidders with proposal forms, which state the general location and description of the contemplated work, an approximate estimate of the materials to be furnished and work to be done or materials to be furnished, and upon which bid prices are asked, and the time in which the work is to be completed. The proposal form will provide for entering the amount of bid bond.

2.2 QUANTITIES IN PROPOSAL FORM: The quantities of the work and materials set forth in the proposal form or on the plans approximately represents the work to be performed and materials to be furnished, and are for the purpose of comparing the bids on a uniform basis. Payment will be made by the Owner to the Contractor only for the actual quantities of work performed or materials furnished in accordance with the plans and specifications, and it is understood that the quantities may be increased or decreased as hereinafter provided, without in any way invalidating the bid prices.

2.3 EXAMINATION OF PLANS, SPECIFICATIONS AND SITE OF THE WORK: Bidders are advised that the plans, specifications and other documents on file with the Consultant shall constitute all the information which the Owner will furnish. Bidders are required, prior to submitting any proposal to read the specifications, proposal, contract and bond forms carefully, to visit the site of the work to examine carefully local conditions, to inform themselves by their independent research, tests, and investigations of the difficulties to be encountered and judge for themselves the accessibility of the work and all attending circumstances affecting the cost of doing the work or time required for its completion, and obtain all information required to make an intelligent proposal. No information given by the owner or any agents thereof, other than that shown on plans and contained in the specifications, proposals and other documents, shall be binding upon the Owner. Bidder shall rely exclusively upon their own estimates, investigations, tests and other data which are necessary for full and complete information upon which the proposal may be based. It is mutually agreed that submission of a proposal is evidence that the bidder has made the examinations, investigations, and tests required herein.

2.4 PREPARATION OF PROPOSAL: The bidder shall submit his proposal on the separate forms furnished by the Owner. All blank spaces in the form shall be correctly filled in and the bidder shall state the prices, written in ink, both in words and numerals, for which he proposes to do the work contemplated or furnish the material required. Such prices shall be written legibly. In case of discrepancy between the price written in words and the price written in figures, the price written in words shall govern. If proposal is submitted by an individual, his name must be signed by him or his duly authorized agent. If the proposal is submitted by a firm, association or partnership, the name and address of each member must be given and the proposal signed by a member of the firm, association, or partnership, or person duly authorized. If proposal is submitted by a company or corporation, the company or corporate name and business address must be given, and the proposal signed by an official or duly authorized agent, and sealed with the corporate seal. Powers of attorney authorizing agents or others to sign proposals must be properly certified and must be in writing and submitted with the proposal.

2.5 BID TIME FOR CONSTRUCTION: It is anticipated the project can be completed within the time shown in the proposal. The time stated shall govern.

2.6 NON-RESPONSIVE PROPOSALS: Proposals will be considered non-responsive if they show any omissions, alterations of form, additions, or conditions not called for, unauthorized alternate bids, or irregularities of any kind. An unsigned proposal is not considered a waivable informality. Unsigned proposals will be returned immediately to the bidder and not accepted as responsive.

2.7 PROPOSAL GUARANTY: No proposal will be considered unless it is accompanied by an acceptable Cashier's Check or bid bond payable to the Owner. The cashier's check shall be in the amount specified in the Notice to Bidders. The proposal guaranty is required by the Owner as evidence of good faith and as a guarantee that if awarded the contract the bidder will execute the contract and furnish the required bonds within ten (10) days after the receipt of acceptance. Bids submitted without proposal guaranty will not be read and will immediately be returned to the bidder.

2.8 FILING OF PROPOSALS: No proposal will be considered unless it is filed with the Owner at the place and within the time limit for receiving proposals as stated in the advertisement. Each proposal shall be in a sealed envelope, plainly marked with the work, "PROPOSAL", and the name or description of the project as designated in the Notice to Bidders.

MAILED PROPOSALS MUST BE IN THE HANDS OF THE OWNER AT THE PLACE AND WITHIN THE TIME LIMIT STATED IN THE ADVERTISEMENT, POSTMARKS NOT WITHSTANDING.

2.9 WITHDRAWING PROPOSALS: A bidder may withdraw his proposal provided his request in writing to do so is in the hands of the official indicated in the Notice to Bidders by the time set for opening of proposals. A bidder may change the unit prices in his proposal provided his request to do so is submitted in writing and is in the hands of said official prior to the time set for opening of proposals. Requests by telephone or telegraph for changes in bid prices or for withdrawal of proposals will not be considered.

2.10 DISQUALIFICATION OF BIDDERS: Bidders may be disqualified and their proposal not considered for any of the following specific reasons:

1. Reason for believing collusion exists among the bidders.
2. Reasonable grounds for believing that any bidder is interested as principal Contractor in more than one proposal for the work contemplated.
3. The bidder being involved in any litigation against the Owner.
4. The bidder being in arrears on any existing contract or having defaulted on a previous contract.
5. Uncompleted work which in the judgment of the Owner will prevent or hinder the prompt completion of additional work if awarded.
6. Proposals in which prices are obviously unbalanced.
7. Proposals submitted after the advertised deadline for receipt of proposals.
8. Proposals not accompanied by bid security.
9. Proposals not signed by the bidder.

2.11 OPENING PROPOSALS: The proposal filed with the Owner will be opened at the time stated in the Notice to Bidders and publicly read aloud, and shall thereafter remain on file with the Owner. Bidders or their agents are invited to be present.

2.12 SALES TAX EXEMPTION: The bid prices shall not include sales tax on materials, supplies, equipment used or consumed in the performance of the contract (construction contracts for City, County and tax exempt entities only). The Owner will furnish the Contractor with a tax exemption certificate to be issued to his retailer in lieu of the tax.

Sales tax for projects for private or taxable entities is to be included even if the improvements are later to become property of a City, County, or other tax exempt entity.

2.13 TIE BREAKERS: In accordance with state law, if two or more bidders submit bids of equal amounts to the penny, the contract, if awarded, shall be awarded by toss of a coin or drawing lots prescribed by the Mayor or chief officer of the governing body.

2.14 ALTERNATES: Only alternates specified in the proposal may be bid. All alternates require a bid unless specifically noted in the proposal form.

2.15 SUBSTITUTIONS PRIOR TO AWARD: Each bidder shall submit his proposal based on the materials and equipment described in the bid documents including addenda and assume no substitutions will be allowed.

Consideration by the Consultant of Contractor's request for substitutions may be given as part of the bid process. However, such request must be submitted in separate envelopes from the actual bid. These requests will not be considered in the selection process.

Substitution request must be submitted in writing and supported by adequate technical and cost data necessary for evaluation of the product by the Consultant. Untimely, incomplete, or exploratory submissions will not be reviewed.

ITEM 3 - AWARD AND EXECUTION OF CONTRACT

3.1 CONSIDERATION OF BIDS: After proposals are opened, the proposals will be tabulated for comparison on the basis of the bid prices and quantities shown in the proposal. Until final award of the contract, the Owner reserves the right to reject any or all proposals, to waive technicalities, and to readvertise for new bids, or proceed to do the work otherwise in the best interests of the Owner.

3.2 AWARD OF CONTRACT: The award of the contract, if it be awarded, will be to the lowest responsive bidder. The Owner reserves the right to withhold the award of the contract for a period of time not to exceed sixty days from the date of opening proposals.

3.3 RETURN OF BIDDER'S GUARANTY: As soon as proposal prices have been tabulated for comparison of bids, the Owner may at his discretion return the proposal guaranties accompanying the proposals which, in his judgment would not be considered in the award; all other proposal guaranties will be retained by the Owner until the required contract and bonds have been executed, after which they will be returned.

3.4 CONTRACT BONDS: Within ten (10) days after written notification of the award of the contract the Contractor shall execute the contract and file with the Owner a good and sufficient Performance Bond in the amount equal to one hundred percent (100%) of the total amount of the contract, as evidenced by the proposal, guaranteeing the full and faithful execution of the work and performance of the contract. A statutory payment Bond shall be executed in the amount of 100 percent (100%) of the contract amount as evidence of all bills for materials and labor having been paid for work provided for in said contract.

In addition to the Performance and Payment Bonds the Contractor shall execute a Maintenance Bond in the amount of one hundred percent (100%) of the total amount of the contract, guaranteeing the work against faulty workmanship and/or materials for a period of one (1) year from the date of the Owner's written acceptance of the work. Should the Contractor fail to correct defective work within five (5) days of receipt of written notice of such work, the Owner reserves the right to cause repairs to be made and to hold the Contractor liable for the cost thereof.

No sureties will be accepted by the Owner who are now in default or delinquent on any bonds or who are interested in any litigation against the Owner. All bonds shall be made on forms furnished by the Owner and shall be executed by an approved surety company authorized to do business in the State of Texas, listed by the U.S. Treasury Department on their latest approved Surety List, and acceptable to the Owner. Each bond shall be executed by the Contractor and the sureties.

Should any surety on the contract be determined unsatisfactory at any time by the Owner, notice will be given the Contractor to that effect, and the Contractor shall immediately provide a new surety satisfactory to the Owner. No payment will be made under the contract until the new surety or sureties, as required, have qualified and been accepted by the Owner. The Contractor will notify the Owner immediately upon receiving notice of any reason the surety cannot fulfill its obligation.

3.5 EXECUTION OF CONTRACT: The person or persons, partnership, company, firm, association, or corporation to whom a contract is awarded shall within ten (10) days after such award sign the necessary agreements entering into the required contract with the Owner. No contract shall be binding on the Owner until it has been approved, executed, attested, and delivered to the Contractor.

3.6 FAILURE TO EXECUTE CONTRACT: The failure of the bidder to execute the required contract within ten days after contract is awarded shall be considered by the Owner as an abandonment of his proposal and the Owner may annul the award. By reason of the uncertainty of the market prices of materials and labor, and its being impracticable and difficult to determine accurately the amount of damages accruing to the Owner by reason of said bidder's failure to execute said bonds and contract within said ten (10) days, the proposal guaranty accompanying the proposal shall be the agreed amount of damages which the Owner will suffer by reason of such failure on the part of the bidder, and shall thereupon immediately be forfeited to the Owner. The filing of a proposal will be considered as an acceptance of this provision.

3.7 BEGINNING OF WORK: The Contractor shall not begin work until notified in writing by the Consultant to do so.

3.8 SUBSTITUTION OF MATERIALS AND EQUIPMENT AFTER AWARD: Substitutions will be considered only under one or more the following circumstances:

1. The substitution is required for compliance with subsequent interpretation of code, passage of laws, or insurance requirements;
2. The specified product is unavailable through no fault of the contractor;
3. The manufacturer or fabricator refuse to certify or guarantee the product as requested;
4. Subsequent information reveals that the specified product is unable to perform properly or to fit in the designated space; or
5. In the Consultant's sole judgment, the substitution would be in the Owner's best interest.

The Contractor must submit a fully documented request for substitution including all pricing information, physical data, performance data and any other information required by the Consultant for

proper evaluation of the product or equipment. In pricing a substitution the Contractor shall take into consideration all changes in other related or connected equipment, structure, mechanical, or electrical, or any other affected trade or supplier and, in submitting a price for a substitution, warrants there will be no other change orders or price adjustments directly or indirectly attributable to the allowed substitution.

ITEM 4 - SCOPE OF WORK

4.1 INTENT OF PLANS AND SPECIFICATIONS: The intent of the plans and specifications is to prescribe a complete work or improvement which the Contractor undertake to do in full compliance with the plans, specifications, special provisions, proposal and contract. Unless otherwise provided, the Contractor shall furnish all labor, tools, materials, machinery, equipment and incidentals necessary for the proper prosecution and completion of the work.

4.2 SPECIAL PROVISIONS: Should any work or conditions which are not covered by these specifications be anticipated on any proposed work, "Special Provisions" for such work will be prepared by the Consultant previous to the time of receiving the bids, and shall be considered as a part of the specifications and contract and complied with by the Contractor.

4.3 INCREASED OR DECREASED QUANTITIES OF WORK: The Owner reserves the right to alter the quantities of work to be performed by either increased or decreasing the quantities at any time when it is found necessary, and the Contractor shall perform the work as altered, increased or decreased, at the contract unit prices. No allowance will be made for anticipated profits nor shall such changes be considered as waiving or invalidating any conditions or provisions of the contract and bond.

4.4 ALTERATION OF PLANS AND SPECIFICATIONS: The Consultant reserves the right to make such changes in the plans and specifications and in the character of the work as may be necessary or desirable to insure completion in the most satisfactory manner, provided such changes do not materially alter the original plans and specifications or change the general nature of the work as a whole. Such changes shall not be considered as waiving or invalidating any condition or provision of the contract and bonds.

4.5 EXTRA WORK: When any work is necessary to the proper completion of the project for which no prices are provided for in the proposal and contract, the Contractor shall do such work, but only when and as ordered in writing by the Consultant. Payment for extra work will be made by "Supplemental Agreement" as hereinafter provided.

4.6 FINAL CLEAN-UP: Upon completion of the work and before acceptance and final payment will be made, the Contractor shall clean and remove from the site of work all surplus and discarded materials, temporary structures, and debris of every kind. He shall leave the site of the work in a neat and orderly condition equal to that which originally existed. Surplus and waste materials removed from the site of the work shall be disposed of at locations satisfactory to the Consultant. No payment will be made for this work, its cost being included in the unit prices bid.

ITEM 5 - CONTROL OF THE WORK

5.1 AUTHORITY OF THE CONSULTANT: All work shall be performed under the supervision of the Consultant in a workmanlike manner and to his satisfaction and in accordance with the contract, plans and specifications. He shall decide all questions which arise as to the quality and acceptability of materials furnished, work performed, interpretation of the plans and specifications, acceptable fulfillment of the contract, compensation, mutual rights between Contractors under these specifications, and suspension of the work. He shall determine the amount and quality of the work performed and materials furnished, and his decisions and estimates shall be final. His estimate of amount of work done shall be a condition precedent to the right of the Contractor to receive money due him under the contract. The consultant shall not be obligated to conduct tests or otherwise insure compliance of the contractor nor shall he instruct the contractor in construction methods or techniques.

5.2 CONFORMITY WITH PLANS: All work shall conform to the lines, grades, cross-sections and dimensions shown on the plans. Any deviation from the plans which may be required by the exigencies of construction; will be determined by the Consultant and authorized by him in writing. All shop or fabrication details shall be furnished by the Contractor and check and approved by the Consultant.

5.3 EXISTING STRUCTURES: The plans show the locations of all known surface and subsurface structures. However, the location of many gas mains, water mains, conduits, sewers, etc., is unknown and the Consultant assumes no responsibility for failure to show any or all these structures on the plans or to show them in their exact location. It is mutually agreed such failure will not be considered sufficient basis for claims for additional compensation for extra work or for increasing the pay quantities in any manner whatsoever, unless the obstruction encountered is such as to necessitate changes in the lines or grades, or require the building of special work, provisions for which are not made in the plans and proposal. In such a case, at the decision of the Consultant, the provisions in these specifications for extra work shall apply.

5.4 COORDINATION OF PLANS, SPECIFICATIONS, PROPOSAL AND SPECIAL PROVISIONS: The plans, specifications, proposal, special provisions and all supplementary documents are intended to describe a complete work and are essential parts of the contract. A requirement occurring in any of them is binding. In case of discrepancies, figured dimensions shall govern over scaled dimensions, plans shall govern over specifications; special provisions shall govern over both general specifications and plans; quantities shown on the plans shall govern over those shown in the proposal. The Contractor shall not take advantage of any apparent error or omission in the plans and specifications, and the Consultant shall be permitted to make such corrections or interpretations as may be deemed necessary for the fulfillment of the intent of the plans and specifications. In the event the Contractor discovers an apparent error or discrepancy, he shall immediately call this to the attention of the Consultant.

5.5 COOPERATION OF CONTRACTORS: The Contractor shall give the work the consistent attention necessary to facilitate the progress thereof, and he shall cooperate with the Consultant, his inspectors, and with other contractors in every way possible. The contractor shall provide all facilities to enable the Consultant and his inspectors to inspect the workmanship and materials entering into the work.

The Contractor shall coordinate the work of his subcontractors between themselves and other contractors. If such subcontractor of other contractor shall assert any claim against the Owner or the Contractor for loss or damage on the work the Contractor shall defend at his own expense any suit based upon such claim. If any judgment is entered against said Contractor for such claim he shall pay all costs and expenses in connection therewith.

5.6 CONSTRUCTION STAKES: The Consultant will furnish the Contractor with benchmarks and a control line necessary for proper prosecution and control of the work. The Contractor shall set his own grade stakes, offsets, and cut stakes using control points established by the Consultant. All stakes, marks, etc. shall be carefully preserved by the Contractor, and in case of careless destruction or removal by him or his employees, such stakes, marks, etc., shall be replaced at the Contractor's expense.

5.7 AUTHORITIES AND DUTIES OF INSPECTORS: Inspectors will be authorized to inspect all work done and all materials furnished. In case of any dispute arising between the Contractor and the inspector as to materials furnished. In case of any dispute arising between the Contractor and the inspector as to materials furnished or the manner of performing the work, the inspector will have authority to reject materials or suspend work until the question at issue can be referred to and decided by the Consultant. The inspector will not, however, be authorized to revoke, alter, enlarge, or release any requirement of these specifications, nor to approve or accept any portion of work, nor to issue instructions contrary to the plans and specifications. He will in no case act as foreman or perform other duties for the Contractor nor interfere with the management of the work.

5.8 INSPECTION: The Contractor shall furnish the Consultant with every reasonable facility for ascertaining whether or not the work as performed is in accordance with the requirements and intent of the specifications and contract. No work shall be done nor materials used without suitable supervision or inspection.

The Owner, the Consultant and State and local agencies having jurisdiction shall at all times have access to and be permitted to observe and review all work and records pertaining to the project. Provided, however, that all instructions to the Contractor will be given through the Consultant or his authorized representatives.

5.9 REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK: All work which has been rejected or condemned shall be repaired or if it cannot be repaired satisfactorily, it shall be removed and replaced at the Contractor's expense. Defective materials shall be immediately removed from the site of the work. Work done without line and grades having been given, work done beyond the lines or not in conformity with the grades shown on the plans or as given, save as herein provided, work done without proper inspection, or any extra or unclassified work done without written authority and prior agreement in writing as to prices shall be done at the Contractor's risk, and will be considered unauthorized and at the option of the Consultant may not be measured and paid for, and may be ordered removed at the Contractor's expense. Upon failure of the Contractor to repair satisfactorily or to remove and replace, if so directed, rejected, unauthorized or condemned work or materials immediately after receiving notice from the Consultant, the Consultant will, after giving notice to the Contractor have the authority to cause defective work to be remedied or removed and replaced, or cause unauthorized work to be removed and to deduct the cost thereof from any monies due to become due the Contractor.

5.10 FINAL INSPECTION: The Consultant will make final inspection of all work included in the contract as soon as practicable after the work is completed. If the work is not acceptable to the Consultant at the time of such inspection, he will inform the Contractor as to the particular defects to be remedied before final acceptance will be made.

5.11 JOB SHACK: If called for on the plans or in the special provisions, the Contractor will furnish a suitable, sturdy, weather-tight, job shack with a telephone and a table for plan layout. The job shack shall be equipped with electric lights, heating and cooling and appropriate number of stools or chairs. The telephone shall be made available to the Owner, Consultant, or their representatives to make calls concerning the project and the Contractor will pay all costs incident thereto. A complete set of plans, specifications and submittals will be maintained at all times in the job shack.

ITEM 6 - CONTROL OF MATERIALS

6.1 SOURCE OF SUPPLY OF MATERIALS: The materials shall be newly manufactured of the best quality procurable as required by the plans, specifications and special provisions. The Contractor shall not start delivery of materials until the Consultant has approved the source of supply. Only materials conforming to these specifications shall be used in the work. The Contractor shall furnish approved materials from other sources if for any reason the product from any source at any time before commencement or during the prosecution of the work proves unacceptable after approval, any material which has become unfit for use will not be permitted in the work.

6.2 SAMPLES AND TESTS OF MATERIALS: Where the Consultant determines that tests of materials are necessary, such tests are necessary, such tests will be made at the expense of the Owner unless otherwise provided in the Technical Specifications, Special Provisions, or the Plans. The failure of the Owner to make tests of materials shall in no way relieve the Contractor of his responsibility of furnishing materials conforming to the specifications. The Contractor shall furnish adequate samples without charge.

6.3 STORAGE OF MATERIALS: Materials shall be stored so as to insure the preservation of their quality and fitness for the work. When directed by the Consultant, they shall be placed on wooden platforms or other hard, clean surfaces and not on the ground, and shall be placed under cover when directed. Stored materials shall be placed and located so as to facilitate prompt inspection.

6.4 DEFECTIVE MATERIALS: All materials not conforming to the requirements of these specifications will be rejected and shall be removed immediately from the site of the work unless permitted to remain by the Consultant. Upon failure on the part of the Contractor to comply with any order of the Consultant made under the provisions of this item, the Consultant will have authority to remove and replace defective material and to deduct the cost of removal and replacement from any money due or to become due to the Contractor.

6.5 ARRANGEMENT AND CHARGE FOR WATER FURNISHED BY OWNER: Where the Contractor desires to use Owner's water in connection with any construction work, he shall make complete and satisfactory arrangements with the Owner for so doing. No charge will be made to the Contractor for meters or water used on the project.

6.6 OTHER UTILITIES: The Contractor must make arrangements for the provision of construction

power, telephone or gas to the site and pay all deposits, fees, charges and bills during the course of construction. The Contractor is not required to pay extension or pole charges for permanent extension of utilities to the site but will be required to pay all costs from the site boundaries to the building if any.

The Contractor shall secure his own permission and pay all cost incident thereto for the use of adjacent properties for storage, access, or other conveniences.

6.7 APPROVED EQUALS: Where a specific product or manufacturer is mentioned by name, it is not the intention to discriminate against an equal product by another manufacturer, but is the intention to set a definite standard. Therefore, the mentioning of a specific product or manufacturer shall be interpreted to mean that products or equipment used that conform to that specified may be submitted for approval to the Consultant. The Contractor and his suppliers must include in the documentation all features, materials, performance, or other differences between the product specified and that submitted for substitution. Failure to disclose significant facts may result in the Consultant rejecting the product after installation. The Consultant shall be the sole judge as to whether a product is indeed equal to that specified. In the event any product is subsequently found unacceptable by the Consultant after installation by failure of the manufacturer or contractor to disclose a specific factor making the product less than equal, the product shall be removed and replaced as specified and at the expense of the Contractor.

If the proposed substitution is submitted at least fourteen (14) days prior to the opening of bids and judged suitable and acceptable by the Consultant, written authority for its use will be issued by the Consultant. Bidding on an unapproved substitute is done at the Contractor's own risk.

If the proposed substitution is not submitted fourteen (14) days prior to the opening of bids, it may be submitted by the General Contractor in writing with appropriate drawings, catalogs, and specifications.

Applications for approved equals must include shop drawings, specifications, and warranty information.

If the proposed substitutions are not submitted and authorized by one of the two methods described above, they will not be permitted.

6.8 INSTALLATION SUPERVISION: The Contractor shall require and bear the expense for the manufacturer of any equipment that needs installation supervision or start-up to oversee the installation of that piece of equipment by providing a representative on the site. The Contractor shall be responsible for functionally testing all equipment. The Consultant shall have 24 hour (minimum) advance notification of any equipment testing. All plant trips, testing, and O & M Manuals shall be included in the bid price.

6.9 OPERATION AND MAINTENANCE MANUALS: The Contractor shall require the manufacturer to provide six (6) complete sets of operation and maintenance manuals for each piece of equipment. This information shall be provided prior to release of retainage. The Contractor shall bind each of the six (6) sets in a tab organized 3-ring binder. All manufacturer's site visits for startup, testing, and O & M Manuals shall be included in the bid price.

6.10 BUY AMERICAN: Unless otherwise approved by the Consultant, Contractors must use

domestic construction materials in preference to non-domestic material if it is priced no higher than 6% higher than the bid of non-domestic material considering all costs of shipping duty.

6.11 SHOP DRAWING REVIEW: Checking of shop drawings, samples and submittals is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Checking neither determines accuracy of quantities or dimensions, nor substantiates installation instructions or performance of equipment or systems designed by the Contractor. The Contractor is responsible for complying with the contract documents, including dimensions, quantities, for coordination between trades, designs by contract, construction means, methods, techniques, sequences and safety.

6.12 STANDARDS: Reference to standards of the American Water Works Association (AWWA), American National Standards Institute (ANSI), American Society for Testing Materials (ASTM), and similar organizations shall mean the latest edition, revision or substitution of the standard in effect at the time of bid.

ITEM 7 - LEGAL REGULATIONS AND PUBLIC RESPONSIBILITY

7.1 LAWS TO BE OBSERVED: The Contractor shall at all times observe and comply with all Federal and State laws and local ordinances and regulations which in any manner affect the conduct of the work.

No plea of misunderstanding or ignorance thereof will be considered. The Contractor and his sureties shall indemnify and save harmless the Owner and his officers, agents and employees against any claims or liability arising from or based on the violation of any such law, ordinance, regulation or order whether by himself or his employees, or sub-contractors.

7.2 PERMITS AND LICENSES: The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the work.

7.3 PATENTED DEVICES, MATERIALS AND PROCESSES: If the Contractor is required or desires to use any design, device, material or process covered by letters patented or copyrighted he shall provide for such use by suitable legal agreement with the patentee or owner. It is mutually agreed and understood that without exception, contract prices shall include all royalties or costs arising from patents, trademarks and copyrights in any way involved in the work. The Contractor and his sureties shall indemnify and save harmless the Owner from any and all claims for infringement by reason of the use of any such patented design, device, material or process of any trademark or copyright in connection with the work agreed to be performed under this contract.

7.4 SANITARY PROVISIONS: The Contractor shall establish and enforce among his employees such regulations in regard to cleanliness and disposal of garbage and waste as will tend to prevent effectively the creation of a nuisance about the work on any property either public or private, and such regulations as are required by the Consultant shall be put into immediate force and effect by the Contractor. The necessary sanitary conveniences for the use of laborers on the work, properly secluded from public observation, shall be constructed and maintained by the Contractor in such manner and at such points as will be approved by the Consultant, and their use shall be strictly

enforced by the Contractor. All sanitary laws and regulations of the State of Texas, and the local government, shall be strictly complied with.

7.5 PUBLIC CONVENIENCE AND SAFETY: Materials stored about the work shall be so placed, and the work shall at all times be so conducted, as to cause no greater obstruction to the public than is considered necessary by the Consultant. The Contractor shall make provisions by bridges or other means at all cross streets, highways, sidewalks and private driveways of the free passage of pedestrians and vehicles, provided that where bridging is impracticable or unnecessary in the opinion of the Consultant, the Contractor may make arrangements satisfactory to the Consultant for the diversion of traffic and shall at his own expense, provide all material and perform all work necessary of the construction and maintenance of roadways and bridges for the diversion of traffic.

The Owner reserves the right to remedy any neglect on the part of the Contractor as regards the public convenience and safety which may come to its attention, after twenty-four hours' notice in writing to the Contractor, save in cases of emergency, when the Owner shall have the right to remedy any neglect without notice; and in either case, the cost of such work done by the Owner shall be deducted from monies due or to become due the Contractor. The Contractor shall notify the Fire Department when any street is closed or obstructed and, when directed by the Consultant, shall keep any street or streets in condition for unobstructed use by fire apparatus. Where the Contractor is required to construct temporary bridges or make other arrangements for crossings over ditches or streams his responsibility for accidents shall include the roadway approaches as well as the structures for such crossings.

7.6 PRIVILEGES OF CONTRACTOR IN STREETS, ALLEYS, AND RIGHT-OF-WAYS: For the performance of the contract, the Contractor will be permitted to occupy such portion of Owner's land, and any street or alleys, or other public places or other rights-of-way as provided for in the ordinances of the City or other governing body, as shown on the plans, or as permitted by the Consultant. A reasonable amount of tools, materials and equipment for construction purposes may be stored in such space, but not more than is necessary to avoid delays in the construction. Excavated and waste materials shall be piled or stacked in such a way as not to interfere with spaces that may be designated to be left free and unobstructed, nor inconvenience occupants or adjoining property. Other Contractors of the Owner may, for all purposes required by their contracts, enter upon the work and premises used by the Contractor, and the Contractor shall give to other constructors of the Owner all reasonable facilities and assistance for the completion of adjoining work. Any additional grounds desired by the Contractor for his use shall be provided by him at his own expense.

7.7 RAILWAY CROSSINGS: Where the work encroaches upon any right-of-way of any railway, the Owner will secure the necessary easement for the work. Where railway tracks are to be crossed, the Contractor shall observe all the regulations and instructions of the railway company as to methods of doing work, or precautions for safety of property and the public. All negotiations with the railway company, except for right-of-way, shall be made by the Contractor. The railway company shall be notified by the Contractor not less than five (5) days previous to time of his intentions to begin the work. The Contractor will not be paid direct compensation for such railway crossing, but shall receive only the compensation as set out in the proposal.

The Contractor shall secure all permits and bear all expenses incident thereto including, but not limited to insurance policy endorsements or required coverage exceeding the minimum limitation shown in 7.17.

7.8 BARRICADES, LIGHTS AND WATCHMEN: Where the work is carried on in, or adjacent to any streets, alley, or public place, the Contractor shall at his own cost and expense furnish and erect such barricades, fences, lights, and danger signals, shall provide such watchmen, and shall take such other protection of persons or property and of the work as are necessary. Barricades shall be painted in a color that will be visible at night. From Sunset to sunrise the Contractor shall furnish and maintain at least one light at each barricade. A sufficient number of barricades shall be erected to keep vehicles from being driven on or into any work under construction. The Contractor shall furnish watchmen in sufficient number to protect the work.

The Contractor will be held responsible for all damage too the work due to failure of barricades, signs, lights, and watchmen to protect it and whenever evidence is found of such damage, the Consultant may order the damaged portions immediately removed and replaced by the Contractor at his own expense. The Contractor's responsibility for the maintenance of barricades, signs, and lights, and for providing watchmen, shall not cease until the project shall have been accepted by the Owner.

7.9 USE OF EXPLOSIVES: No explosives shall be used without the expressed written consent of the Consultant. Should the Contractor use explosives in the prosecution of the work, the utmost care shall be exercised so as not to endanger life or property. The Owner shall not be held liable for damages done by the Contractor in the use of explosives. The Contractor shall notify the proper representatives of any public service corporation, any company or any individual not less than 24-hours in advance of the proposed use of explosives which might damage or endanger their lives or their property along or adjacent to the work.

7.10 PROTECTION AND RESTORATION OF PROPERTY: Where the work passes over or through private property, the Owner will provide the necessary right-of-way. The Contractor shall not enter upon private property for any purpose without having previously obtained permission from the Owner. The Contractor shall be responsible for the preservation of, and shall use every precaution to prevent damage to all trees, shrubbery, plants, lawns, fences, culverts, bridges, pavements, driveways, sidewalks, etc. to all water, sewer, and gas lines, to all conduits, to all overhead pole lines, or appurtenances thereof; and to all other public or private property along or adjacent to the work. The Contractor shall notify the property representatives of any public utility, corporation, any company or individual in advance of any work which might damage or interfere with the operation of their or his property along or adjacent to the work. The Contractor shall be responsible for all damage or injury to property of any character resulting from any act of omission, neglect, or misconduct in the manner or method of executing the work. In case of failure on the part of the Contractor to restore such property or make good such damage or injury, the Owner may, upon written notice under ordinary circumstances and without notice when a nuisance or hazardous condition results, proceed to repair, rebuild, or otherwise restore such property as may be determined necessary, and the cost thereof will be deducted from any monies due or to become due the Contractor under his contract.

7.11 RESPONSIBILITY FOR DAMAGE CLAIMS: The Contractor and his sureties shall indemnify and save harmless the Owner and his officers, agents, and employees from all suits, actions, or claims of any character, brought on account of any injuries or damages sustained by an person(s) or property from the said Contractor or his employees, by any negligence in safeguarding the work, or through the use of unacceptable materials in constructing the work, or by any act or omission, neglect or misconduct of said Contractor.

7.12 CONTRACTOR'S CLAIM FOR DAMAGES: Should the Contractor claim compensation for any alleged damage by reason of the acts of omissions of the Owner, he shall within seven days after sustaining such alleged damage make a written statement to the Consultant, setting out in detail the nature of the alleged damage. The Contractor shall file with the Consultant an itemized statement of the details and amount of such alleged damage and shall give the Consultant access to all accounts, receipts, vouchers, bills of lading, and other books or papers containing any evidence as to the amount of such alleged damage. Unless such statements shall be filed as hereinabove required, the Contractor's claim for compensation shall be waived and he shall not be entitled to payment on account of such damage.

7.13 PUBLIC UTILITIES AND OTHER PROPERTY TO BE CHANGED: In case it is necessary to change or move the property of any owner or of a public utility, such property shall not be moved or interfered with until ordered to do so by the Consultant. the right is reserved to the owner of public utilities to enter upon the limits of the contract for the purpose of making such changes or repairs of their property that may be necessary by performance of the contract.

7.14 USE OF A SECTION OR PORTION OF THE WORK: Wherever in the opinion of the Consultant any section or portion of the work or any structure is in suitable condition, it may be put into use upon the written order of the Consultant, and such usages shall not be held to be in any way an acceptance of said work or structure or any part thereof or as a waiver of any of the provisions of these specifications or the contract pending final completion and acceptance of the work; all necessary repairs and removals of any section of the work so put to use, due to defective materials or workmanship or to operations of the Contractor shall be performed by the Contractor at his own expense.

7.15 CONTRACTOR'S RESPONSIBILITY FOR THE WORK: Until written acceptance by the Consultant, as provided for in these specifications, the work shall be under the charge and care of the Contractor, and he shall take every necessary precaution to prevent injury or damage to the work or any part thereof by action of the elements or from any other cause whatsoever, whether arising from the execution or nonexecution of the work.

7.16 NO WAIVER OF LEGAL RIGHT: Inspection of any materials, any order, measurement, quantity or certificate by the Consultant, any order by the Owner for payment of money, any payment for or acceptance of any work, or any extension of time, or any possession taken by the Owner shall not operate as a waiver of any provisions of the contract or any power therein reserved to the Owner of any rights or damages therein provided. Any waiver of any breach of contract shall not be held to be a waiver of any other subsequent breach. The Owner reserves the right to correct any error that may be discovered in any estimate that may have been paid and to adjust the same to meet the requirements of the contract and specifications. The Owner reserves the right to claim and recover by process of law sums as may be sufficient to correct any error or make good any deficiency in the work resulting from such error, dishonesty or collusion, upon the conclusive proof of collusion or dishonesty by the Contractor or his agents, discovered in the work after the final payment has been made.

7.17 CONTRACTOR'S INSURANCE: The Contractor before starting work must furnish to the Owner certificates of insurance or other acceptable evidences from reputable insurance companies licensed to write insurance in the State of Texas, showing that the Contractor is covered by the insurance as follows:

In the event any work is sublet, the Contractor shall require the subcontractor similarly to provide the same coverage and shall himself acquire evidence of such coverage on behalf of the subcontractor.

1. Commercial General Liability Insurance: Limits for bodily injury of not less than \$250,000/\$500,000 and for property damage of not less than \$100,000. The policy shall be on the commercial general liability form, and including contractual liability coverage.
2. Business Automobile Liability Insurance: Limits for bodily injury liability of not less than \$250,000/\$500,000 and for property damage of not less than \$100,000, on all self-propelled vehicles not covered by the General Liability Insurance used in connection with the contract, whether owned, non-owned or hired.
3. All Risk Builder's Risk Insurance or Installation Floater: This policy insures all materials, supplies, machinery, equipment, fixtures, and temporary structures, including foundation, the property of the Contractor, or for which the Contractor may be liable, to be used in or incidental to the construction, fabrication, installation, erection, repair alteration, or completion of Owner's facilities being constructed under this contract including the interest of any subcontractor.

This policy shall also cover property in transit to job site, while in temporary storage on and off-site and while at Owner's premises until the entire project is completely erected and accepted by the Owner.

4. Statutory Workmens' Compensation and Employer's Liability Insurance
5. Owner's and Contractor's Protective Liability: Limits not less than those for Commercial General Liability.

The Owner shall be notified by the Contractor and Insurance company at least 30 days prior to any changes in coverage including limits, locations, hazards or any other alteration materially affecting this contract. Should coverage be canceled or reduced below the required limits the Contractor shall immediately stop work until coverage can be reinstated and new certificates of coverage provided.

7.18 PREVAILING WAGES: Not less than the prevailing wages for each trade as established by the U.S. Department of Labor shall be paid to person employed on this project. The Contractor shall maintain adequate payroll records to allow verification and shall make restitution to any person underpaid in accordance with this provision.

7.19 OWNER INDEMNIFIED: The Contractor shall indemnify and hold harmless the Owner and the Consultant and their agents and employees from and against all claims, damages, losses and expenses, including but not limited to legal fees, arising out of the performance of the Contract, provided that any such claim, damage, loss or expense is alleged to be caused in whole or in part by any negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

ITEM 8 - PROSECUTION AND PROGRESS

8.1 SCHEDULE: The Contractor will provide the Consultant with a schedule of work for the various trades and continually update the schedule as needed. Acceptance by the Consultant of a schedule showing accelerated completion in advance of that time shown and required in the contracts shall not obligate the City or Consultant in any way to pay costs for such self-imposed acceleration.

8.2 SUB-LETTING THE WORK: If the Contractor sublets any part of the work to be done under this contract, he will not under any circumstances be relieved of his responsibilities and obligations. All transactions of the Consultant will be with the Contractor. Subcontractors will be considered only in the capacity of employees or workmen and shall be subject to the same requirements as to character and competency. The Contractor shall at all times when the work is in progress be represented by a qualified designated representative.

8.3 ASSIGNMENT OF CONTRACT: The Contractor shall not assign, transfer, convey or otherwise dispose of the contract or his right, title or interest in or to the same, or any part thereof, without the previous consent of the Owner and concurred in by the sureties. If the Contractor does, without such previous consent, assign, transfer, convey, or otherwise dispose of the contract or his right, title or interest therein, or any part thereof to any person or persons, partnership, company, firm or corporation, or by bankruptcy, voluntary or involuntary, or by assignment under the insolvency laws of any state, attempt to dispose of the contract or make default in or abandon said contract, then the contract may at the option of the Owner be revoked and annulled, unless the sureties shall successfully complete said contract, and any monies due or to become due under said contract shall be retained by the Owner as liquidated damages for the reason that it would be impracticable and extremely difficult to fix the actual damages.

8.4 PROSECUTION OF THE WORK: The Contractor shall begin the work to be performed under the contract within ten (10) days after the date of the authorization to begin work and shall continuously prosecute same with such diligence as will enable him to complete the work and shall continuously prosecute same with such diligence as will enable him to complete the work within the time limit specified. He shall notify the Consultant at least twenty four (24) hours before beginning work at any point. He shall not open up work to the detriment of work already begun. The beginning, sequence and prosecuting of the work shall be governed by the orders of the Consultant, and the Contractor shall conduct his operations so as to impose a minimum interference to the public.

8.5 LIMITATION OF OPERATIONS: The work shall be so conducted as to create a minimum amount of inconveniences to the public. At any time when in the judgment of the Consultant the Contractor has obstructed or closed or is carrying on operations on a greater portion of the street or public way than is necessary for the proper execution of the work, the Consultant may require the Contractor to finish the sections on which work is in progress before operations are started on any additional section.

8.6 CHARACTER OF WORKMEN AND EQUIPMENT: The Contractor shall employ such superintendents, foremen and workmen as are careful and competent, and the Consultant may demand the dismissal of any person or persons employed by the Contractor in, about or on the work who shall misconduct himself or be incompetent or negligent in the proper performance of his or their duties or neglect or refuse to comply with the directions of the Consultant, and such person or persons shall not be employed thereon again without the written consent of the Consultant. The Contractor

shall furnish such equipment as is considered necessary for the prosecution of the work in an acceptable manner, and at a satisfactory rate or progress.

8.7 COMPUTATION OF CONTRACT TIME FOR COMPLETION: The Contractor shall complete the work within the number of calendar days stated in the contract. For the purpose of computation; calendar days will be considered as starting the date shown in the written authorization by the Consultant to begin work.

The Contractor will furnish the Consultant a monthly statement on forms approved by the Consultant, showing number of calendar days used during the month, total number of calendar days allowed in contract, and the calendar days remaining under the contract. If the satisfactory completion of the contract shall require unforeseen work or work and materials in greater amounts or quantities than those set forth in the contract, then additional working days or suspension of time charged will be allowed the Contractor equal to the time which, in the opinion of the Consultant, the work as a whole is delayed. Requests for such extensions must be made within thirty (30) days of the start of the event causing the delay.

8.8 FAILURE TO COMPLETE ON TIME: The time of completion is the essence of the contract. For each calendar day that any work shall remain uncompleted after the time specified in the proposal and the contract, or the increased time granted by the Owner, or as automatically increased by additional work or materials ordered after the contract is signed, the sum per day given in the following schedule, unless otherwise specified in the Special Provisions will be deducted from the monies due the Contractor, not as a penalty but as liquidated damages.

<u>Amount of Contract</u>	<u>Amount of Liquidated Damages Per Day</u>
Less than \$ 15,000.00	\$ 15.00
\$ 15,001.00 to \$ 25,000.00	\$ 25.00
\$ 25,001.00 to \$ 50,000.00	\$ 50.00
\$ 50,001.00 to \$ 100,000.00	\$ 75.00
\$ 100,001.00 to \$ 500,000.00	\$100.00
\$ 500,001.00 to \$1,000,000.00	\$250.00
\$1,000,001.00 and up	\$500.00

The sum of money thus deducted for such delay, failure or non-completion is not to be considered as a penalty, but shall be deemed, taken and treated reasonable liquidated damages, since it would be impracticable and extremely difficult to fix the actual damages.

8.9 SUSPENSION BY COURT ORDER: The Contractor shall suspend such part or parts of the work ordered by the Court, and will not be entitled to additional compensation by virtue of such Court Order. Neither will he be liable to the Owner in the event the work is suspended by such Court Order.

8.10 TEMPORARY SUSPENSION: The Consultant shall have the authority to suspend work wholly or in part for such period or periods as he may deem necessary due to unsuitable weather conditions or other conditions as are considered unfavorable for the suitable prosecution of the work. If it should become necessary to stop work for an indefinite period, the Contractor shall store all materials in such manner that they will not obstruct or impede the public unnecessarily nor become damaged in any way, and he shall take every precaution to prevent damage or deterioration of the work performed, he shall

provide suitable drainage about the work and erect temporary structures where necessary. The Contractor shall not suspend work without written authority from the Consultant, and shall proceed with the work promptly when notified by the Consultant to resume operations. The "Time Charge" will be suspended during any such period of suspension.

No claims shall be made by the Contractor for damages resulting from hindrances or delays from any cause, except by written order by the Owner to stop work, during the progress of any portion of this contract. In case said work is stopped by the Owner, then such expense caused by said work stoppage shall be determined by the Consultant and paid to the Contractor by the Owner. Claims for such work stoppage delay must be in writing and made within ten (10) days of initial occurrence of said claim or claim will be deemed to be waived.

8.11 SUSPENSION OF WORK AND ANNULMENT OF CONTRACT: The work or any portion of the work under contract shall be suspended immediately on written order of the Consultant, a copy of such notice to be served on the Contractor's sureties, or the contract may be annulled by the Owner for any good cause or causes, among others of which special reference is made to the following.

1. Failure of the Contractor to begin work within the time specified.
2. Substantial evidence that the progress of the work being made by the Contractor is insufficient to complete the work within the specified time.
3. Failure of the Contractor to provide sufficient and proper equipment for properly executing the work.
4. Substantial evidence that the Contractor has abandoned the work.
5. Substantial evidence that the Contractor has become insolvent or bankrupt, or otherwise financially unable to carry on the work.
6. Deliberate failure on the part of the Contractor to observe any requirements of these specifications or to comply with any orders given by the Consultant as provided for in these specifications.
7. Failure of the Contractor promptly to make good any defects in materials or workmanship, or any defects of any nature, the correction of which has been directed by the Consultant.
8. Substantial evidence of collusion for the purpose of illegally procuring a contract or perpetrating fraud on the Owner in the construction of work under contract. When the work is suspended for any of the causes itemized or for any other cause or causes, the Contractor shall discontinue the work or such part thereof as the Consultant shall designate, whereupon the sureties may at their option assume the contract or that portion thereof which the Consultant has ordered the Contractor to discontinue, and may perform the same or may, with the written consent of the Owner, sublet the work or that portion of the work so taken over, provided, however, that the sureties shall exercise their option within fifteen (15) days after the written notice to discontinue the work has been served upon the Contractor and upon the sureties or their agents. The sureties in such event shall assume the Contractor's place in all respects, and shall be paid by the Owner for all work performed by them in accordance with the terms of the Contract. All monies remaining due the Contractor at the time of his default shall thereupon become due and payable to the sureties as the work progresses, subject to all the terms of the Contract. In case the sureties do not within the hereinabove specified time, exercise their right and option to assume the contract or that portion thereof which the Owner has ordered the Contractor to discontinue, then the Owner shall have the

power to complete the work herein described or such part thereof as it may deem necessary, and the Contractor hereto agrees that the Owner shall have the right to take possession of and use any of the materials, plant, tools, equipment, supplies, and property of every kind provided by the Contractor for the purpose of this work and to procure other tools, equipment, and materials for the completion of the same, and to charge to the account of the Contractor the expense of said contract for labor, materials, tools, equipment and expense incident thereto. The expense so charged shall be deducted under the contract or any part thereof. The Owner shall not be required to obtain the lowest bid for the work of completing the contract, but the expenses to be deducted shall be the actual cost of such work. In case such expense is less than the sum which would have been payable under the contract if the same had been completed by the Contractor, then in such case the Owner may pay to the Contractor the difference in the cost, provided that the Contractor shall not be entitled to any claim for damages or for loss of anticipated profits. In case such expense shall exceed the amount which would have been payable under the contract if the same had been completed by the Contractor, then the Contractor and his sureties shall pay the amount of such excess to the Owner on notice of the excess due. When any particular part of the work is being carried on by the Owner under the provisions of this section, the Contractor shall continue the remainder of the work in conformity with the terms of the contract, and in such manner as will in no wise hinder or interfere with the performance or workmen employed as above provided by the Owner.

8.12 TERMINATION OF CONTRACT: The Contract will be considered fulfilled save as provided in any maintenance stipulations, bond, or by law, when all work has been completed, the final inspection made by the Consultant, and final acceptance and final payment made by the Owner.

ITEM 9 - MEASUREMENT, PAYMENT AND GENERAL GUARANTY

9.1 MEASUREMENT OF QUANTITIES: The determination of quantities of work acceptably completed under the terms of the contract, or as directed by the Consultant in writing, will be made by the Consultant based on measurements made by the Consultant. These measurements will be taken according to the U.S. Standard measurements used in common practice and will be the actual length, area, solid contents, numbers and weights.

9.2 SCOPE OF PAYMENT: The Contractor shall receive and accept the compensation, as herein provided, in full payment for furnished all labor, tools, materials, equipment and incidentals, for performing all work contemplated and embraced under the contract, for all loss or damage arising out of the nature of the work, or from the action of the elements;; for any unforeseen obstruction which may arise or be encountered during the prosecution of the work and before its final acceptance by the Consultant: for all risks of whatever description connected with the prosecution of the work; for all expense incurred by or in consequence of suspension or discontinuance of such prosecution of the work as herein specified; for any infringement of patents, trademarks or copyrights, and for completing the work in an acceptable manner according to the plans and specifications. The payment of any current or partial estimate prior to final acceptance of the work by the Owner shall in no way constitute an acknowledgement of the acceptance of the work, nor in any way prejudice or affect the obligation of the Contractor to repair, correct, renew, or replace, at his own expense, any defects or imperfections in the construction or in the strength or quality of the materials used in or about the construction of the work under contract and its appurtenances nor any damage due or attributed to such defects, which defects, imperfections, or damage shall have been discovered on or before the final inspection and acceptance of the work. The Consultant shall be the sole judge of such defects, imperfections, or damage, and the Contractor shall be liable to the Owner for failure to correct the same, as provide

herein.

9.3 PAYMENT FOR EXTRA WORK: The extra work done by the Contractor and authorized and approved by the Consultant will be paid for in the manner hereinafter described and the compensation thus provided shall be accepted by the Contractor as payment in full for all labor, materials, tools, equipment and incidentals and all superintendents and time keepers services, all insurance, bonds and all other overhead expense incurred in the prosecution of the extra work. Payment for extra work will be made by one of the following methods:

1. Methods "A" - By unit prices agreed on in writing by the Consultant and approved by the Owner before said work is commenced, subject to all other conditions of the said contract.
2. Method "B" - By a lump sum price agreed on in writing by the Consultant and the Contractor and approved by the Owner before said extra work is commenced, subject to all other conditions of the contract.

9.4 PARTIAL ESTIMATES: Between the 25th and the last day of each month, the Contractor will make an approximate estimate of the value of the work done during the month under these specifications, and submit it to the Consultant for approval. Whenever the said estimate or estimates of work done since the last previous estimate exceeds Five Hundred Dollars (\$500.00) in amount, a percentage of such estimated sum will be paid the Contractor on or before the 15th day of the month next following. The partial estimate may include acceptance of nonperishable materials delivered to the work for which net invoice value will be allowed. The percentage retained by the Owner will normally be ten (10) percent on all partial estimates.

In accordance with state law for public works contracts totalling four hundred thousand (\$400,000.00) or more in construction cost the Owner will: (1) establish an interest bearing escrow account at a local bank of Owner's choosing for depositing retainage. Retainage and interest will be paid from the escrow (either in full or in part) as stipulated under 9.6 Final Payment; or, (2) reduce retainage to five (5) percent of each partial estimate.

It is understood that the partial estimates from month to month will be approximate only and all partial monthly estimates and payments will be subject to correction in the estimate rendered following the discovery of an error in any previous estimate, and such estimate shall not in any respect be taken as an admission of the Owner of the amount of work done or of its quality or sufficiency, nor an acceptance of the work or materials delivered or the release of the Contractor of any of his responsibility under the contract. No partial or monthly estimates will be made on contracts with a value of less than two thousand dollars (\$2,000.00).

9.5 FINAL ACCEPTANCE: Whenever the improvement provided for by the contract shall have been completely performed on the part of the Contractor, the Contractor shall notify the Consultant that the improvement is ready for final inspection, and if the work is satisfactory and in accordance with the specifications and contract, he will recommend the Owner that the project be accepted and final payment made.

9.6 FINAL PAYMENT: Whenever the improvements provided for by the contract shall have been completely performed on the part of the Contractor as evidenced by the Consultant in his recommendation, a final estimate showing the value of the work will be prepared by the Contractor as

soon as the necessary measurements and computations can be made. All prior estimates upon which payments have been made are subject to necessary corrections or revisions in the final payment. The amount of this final estimate, less any sums previously paid under the provisions of the contract, will be paid the Contractor within thirty days after final acceptance provided:

1. The Contractor has furnished to the Owner satisfactory evidence that all sums of money due for any labor, materials, apparatus, fixtures, or machinery furnished for and used in the prosecution of the work have been paid, or that the person or persons to whom the same may respectively be due have consented to such final payment.
2. For public works projects, approval by the local governing body of the project by resolution has been made showing agreement by the Owner and Contractor and that all items have been complete or that cost of items not completed have been negotiated resulting in a reduction in the contract amount and subsequent retainage satisfactory to the Owner.

The acceptance by the Contractor of the last payment as aforesaid shall operate as and shall release the Owner from all claims or liabilities under the contract for anything done or furnished or relating to the work under the contract or connected with the contract.

9.7 GENERAL GUARANTY: Neither the final certificate of payment nor any provision in the contract documents, nor partial or entire occupancy of the premises by the Owner, shall constitute an acceptance of work not done in accordance with contract documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall bear all expenses incident to and remedy any defects in the work or the equipment, including defects or negligence in labor or materials, and pay for any damage to other work resulting therefrom, which shall appear within a period of one year from the date of final acceptance of the work unless a longer period is specified. The Owner will give notice of observed defects with reasonable promptness.

9.8 PAYMENTS WITHHELD: The Owner may, on account of subsequently discovered evidence, withhold or nullify the whole or part of any certificate for partial payment to such extent as may be necessary to protect himself from loss on account of:

1. Defective work not remedied.
2. Claims filed or reasonable evidence indicating probably filing of claims.
3. Failure of the Contractor to make payments properly to subcontractors or for material or labor.
4. Damage to another contractor.
5. Reasonable doubt that the work can be completed for the unpaid balance of the contract amount.
6. Reasonable indication that the work will not be completed within the contract time.

When the above grounds are moved or the Contractor provides a Surety Bond satisfactory to the Owner, which will protect the Owner in the amount withheld, payment shall be made to the Contractor for amounts withheld because of said grounds.

9.9 ITEMIZED BREAKDOWN OF BID: Within ten days of notification of award the Contractor shall furnish to the Consultant an itemized breakdown of the lump sum bid items for convenience in assigning values for completed work. The breakdown must not be unbalanced and must contain sufficient itemization acceptable to the Consultant.

Technical Specifications

Phelps Lake Park

Technical Specifications Index

Seeding - General	163
Seeding - Job Specific	164
Hyrdromulching	167
Site Preparation and Erosion Control	301
Submittals And Substitutions	1340
Product Handling	1640
Project Closeout	1705
Earthwork	2200
Subgrade Preparation And Compaction	2231
Job Clean Up	2590
Trail System	2800
Concrete For Structures	3010

SECTION 163
SEEDING - GENERAL

1. DESCRIPTION: Provide all materials, labor and equipment to complete the work of this Section. Seeding shall consist of preparing ground to receive, fertilizing and seeding/mulching.
2. GENERAL: In all cases the guiding specifications shall be Horticultural Standards - American Association of Nurserymen, Inc. and shall be in compliance with FHA data sheet No. SP-251. Provide grass at all areas disturbed by construction, including at the street right-of-way.
3. MATERIALS:

- A. Grass Seed: All seed must meet the requirements of the Federal Seed Act and shall comply with the tolerances provided by this Act. The containers shall be labeled by the suppliers and shall show the percentages by weight of pure seed (minimum 97%), germination (minimum 85%) and weed seed maximum of 1%. See drawings or Job Specifics for seeded and/or sodded requirement.

Top soil physically identified either as existing soil, soil initially stripped, and respread, or soil imported to the site, shall be fertile and capable of improvement to permit a normal growth of grass. It shall be free of extraneous materials harmful to plant growth. The soil shall be tested by facilities located at a Land Grant College or by a private soil chemical testing laboratory. Soil tests shall show soil type according to the Unified Soil Classification System, reveal any deficiencies in plant food elements and organic matter, and any deficiency or excess in acidity or alkalinity. The soil shall be improved as recommended by the agency or as indicated by laboratory test.

- B. Lime and Fertilizers: These materials shall consist of commercial quality ground limestone and commercial chemical fertilizer containing stated ratios of nitrogen, phosphorous and potash. The latter shall be transported and stored in containers to insure proper protection and handling. Ratio of nitrogen, phosphorous, and potash nutrients shall be 1:1:1 per Consultant's instructions and applied at a rate of one half (0.5) pounds of nitrogen per one thousand (1000) square feet. The fertilizer shall be dry and in good physical condition. Fertilizer that is powdered or caked will be rejected. Distribution of the fertilizer for the particular item of work will shall meet the approval of the Consultant. Additionally, add pelletized lime at the rate of 800 pounds per acre.

4. PLANTING METHODS: GRASS

- A. Finish Grading: All areas which have been regraded or stripped of top soil shall be scarified, leveled and brought to an accurate subgrade. Stripped top soil or top soil imported for the seed bed shall be spread after subsoil fills are properly compacted, meeting the approved finish grade and shall be at least five inches deep when compacted.

1. Perform fine grading within Contract limits, including adjacent transition areas, where required, to new elevations, levels, and contours indicated. Provide subgrade surfaces parallel to finished surface grades. Provide uniform levels and slopes.
2. Grade surface to ensure areas drain away from structures and to prevent ponding and pockets of surface drainage. Provide subgrade surfaces free from irregular surface changes. Provide subgrade surface free of exposed boulders or stones exceeding 2 inches in greatest dimension in lawn areas.
3. Provide adequate drainage of the working area at all times.

4. Fine grade soil eliminating rough and low areas to ensure positive drainage. Maintain levels, profiles, and contours of subgrades.
 5. Remove stones, roots, weeds, and debris while raking topsoil. Rake surface clean of stones 1 inch or larger in any dimension and of all debris.
 6. Fire Ant Control - Fire ants shall be controlled with spot application of insecticide as necessary. Apply after dew has dried and when no rain is expected for 6 hours. Spot treat entire area of planting/grassing.
- B. Preparation of Seed Bed: Where existing undistributed soil is satisfactory, the seed bed shall be prepared by plowing or scarifying to a depth of at least four inches, then harrowing and/or dragging thoroughly to smooth the surface. All weeds and competing grasses shall be eliminated by use of an approved herbicide prior to seeding. Where existing top soil is not acceptable for grass growth five inch minimum thickness of approved top soil shall be furnished and installed. Prevent erosion of the finish grading or ground surface. Top soil shall be harrowed or dragged to form a smooth seed bed.
- C. Seeding:
1. The finish grading and preparation of the seed bed shall be free of birdbaths and be approved by the Consultant prior to seeding, hydroseeding or hydromulching.
 2. Broadcast Seeding: The prepared seed bed shall be furrowed lightly with a rake, seed sown at the rate prescribed in these specifications or shown on the plans, then rolled with a hand or mechanical roller not exceeding 100 pounds of weight per foot of width. All seeded areas shall be sprinkled with a fine spray to avoid runoff of water and be adequately protected from foot or vehicular traffic during the period grass is being established.
 - 3.. "Hydroseeding" or "Hydromulching": Mechanical hydroseeding (that is mixing seed, water, fertilizers, fiber mulch and tackifiers) shall be performed using specialized equipment made for spraying the seed mixture specified in the "Job Specific" portion of this section. The flow of water shall be regulated to provide a non-erosive spray rather than a high-impact jet of water which damages the prepared surface. Application of hydromulch shall be applied in accordance with SECTION 0167 - HYDROMULCHING, within this contract.
- D. Maintenance and Acceptance: All seeded areas shall be watered and maintained until a thick stand of grass is established. After three to four weeks of favorable weather, bare spots shall be recultivated, reseeded, raked and rolled as in the original work. Maintenance, including mowing, shall continue until this work is accepted and approved by the Owner.
- Grass will be acceptable after a minimum of four (4) mowings by the Contractor or on a date the entire project is substantially completed (whichever is later) and grass is healthy and weed-free with 95% coverage and no bare spots exceeding six inches in diameter.
- E. Seasonal Limits: Seeding shall be done during the proper season when the soil is frost-free and during favorable seeding conditions. Bermuda grass seed shall not be planted prior to May 1st or after August 15th without written consent from the Consultant.
5. SOIL RETENTION BLANKETS: Soil retention blankets where shown on the plans shall be photodegradable or biodegradable excelsior blankets or woven paper mats commercially manufactured for installation on bare soils to protect construction areas from washing. Blankets

shall be installed snugly over the area to be protected using six inch long "U" shaped wire staples on 2'-0" centers along edges and at staggered 4'-0" spacing on the mat face. No gaps shall be left between adjoining mats. Blankets shall be equal to AMXCO "Curlex" or Gulf States Paper Company's "Hold-Gro" woven paper mesh. Grass seed shall be planted in conjunction with all soil retention blankets.

6. MEASUREMENT AND PAYMENT: Payment for seeding shall be at the unit price bid for seeding which shall include surface preparation, furnishing and spreading seed either by broadcast or hydroseeding as specified elsewhere, grow-in, fertilization, and including soil retention blankets if shown on the plans.

END OF SECTION 163

SECTION 164
SEEDING - JOB SPECIFIC

DESCRIPTION: Seeding shall consist of providing and planting Common Bermuda grass seed (without hulls) on all areas disturbed on the project site not scheduled for sod or hydromulching, including watering and fertilizing.

CONSTRUCTION METHODS: Immediately prior to seeding the Contractor shall cross disk the areas to be seeded to a minimum dept of 4". The site shall then be dragged and rolled to a smooth surface and planted with Common bermuda seed (without hulls). Bermuda seed shall be applied by whatever means the Contractor deems appropriate at a rate of not less than 87 pounds per acre. Seeds shall be evenly distributed over the entire site to be planted. The site shall then be raked lightly to provide scant cover and lightly watered. From that date forward, the Contractor shall be responsible for watering the seed daily for the next five days in the absence of rainfall during that period.

Following the period of intense watering, the Contractor shall be responsible for watering the seed once weekly for three consecutive weeks. The Contractor will not be required to water the seed in any week in which the accumulated rainfall for the week exceeds on inch.

The Consultant shall have the authority to increase or decrease the quantity of water used during each watering event.

Lime and Fertilizers: These materials shall consist of commercial quality ground limestone and commercial chemical fertilizer containing stated ratios of nitrogen, phosphorous and potash. The latter shall be transported and stored in containers to insure proper protection and handling. Ratio of nitrogen, phosphorous, and potash nutrients shall be 1:1:1 per Consultant's instructions and applied at a rate of one half (0.5) pounds of nitrogen per one thousand (1000) square feet. Additionally, pelletized lime shall be spread at a rate of 800 pounds per acre. The fertilizer shall be dry and in good physical condition. Fertilizer that is powdered or caked will be rejected. Distribution of the fertilizer for the particular item of work will shall meet the approval of the Consultant. Unless otherwise specified, two applications of fertilizer are required. The first shall be within five days of planting. The second shall be 30 days after the first application.

END OF SECTION 164

SECTION 167 HYDROMULCHING

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and all applicable specification sections, apply to this section.

1.02 DESCRIPTION

- A. This section specifies the requirements for preparing ground and providing seed, topsoil, water and fertilizer necessary for hydromulching.

1.03 SUBMITTALS

- A. Seed Certification - Certification shall be submitted from the supplier for each type of seed specified. Certification shall accompany the delivery of the seed and shall indicate that the seed is in accordance with the requirements of the Texas Seed Law.
- B. Fertilizer Certification - Certification shall be submitted from the fertilizer manufacturer as to the chemical analysis of the fertilizer, a listing of the elements contained therein and their percentages. Certification shall also indicate that the fertilizer is in accordance with the requirements of the Texas Fertilizer Law.

1.04 PRODUCT HANDLING

- A. Seed Delivery - Each variety of seed shall be delivered in separate bags or containers, labeled to indicate pure live seed, name and type of seed.
- B. Fertilizer Delivery - Fertilizer shall be delivered in the manufacturer's unopened containers, labeled to indicate the manufacturer's name and product identification. Containers shall be stored protected from ground contact and from the elements.

1.05 GUARANTEE

- A. A written guarantee shall be provided guaranteeing to maintain the treated areas in a healthy, vigorous, undamaged condition for a period of 60 days beginning on the date of written acceptance of the work.
- B. Contractor shall guarantee a full stand of grass, 95% cover with no bare areas in excess of 6 inches diameter.
- C. Guarantee shall provide for timely filling, leveling and repairing eroded areas, reseeding areas exhibiting lack of healthy growth and mowing as necessary to maintain a neat appearance.

PART 2 PRODUCTS

- A. Type - Turf grass seed shall be appropriate to season. The seed shall be harvested within 1 year prior to Planting, free of Johnson grass, field bind weed, dodder seed, and free of other weed seed to the limits allowable under the Federal Seed Act and applicable seed laws. The seed shall be extra fancy grade, treated with fungicide, and shall have a germination and purity that will produce, after allowance for Federal Seed Act tolerances, a pure live seed content of not less than 85 percent, using the formula: purity percent times (germination percent times

plus hard or sound seed percent). Seed shall be labeled in accordance with U.S. Department of Agriculture rules and regulations.

B. Amounts:

Item	Rate Per 1000 Sq. Ft.
Seed	As per season, see below
Fertilizer	12 lbs.
Water	As needed
Real Virgin Wood	Minimum 50 lbs. to achieve
Fiber Mulch	covering of seeded area

C. Spring/Summer Planting (April 15 to Sept. 15)

Hulled Bermuda 2 lbs./1,000 Sq. Ft.

D. Fall/Winter Planting (September 15 to April 15)

Unhulled Bermuda 1 1/2 lbs./1,000 Sq. Ft.

KY Fesque 5 lbs./1,000 Sq. Ft.

E. Fertilize as per paragraph B.

2.02 TOPSOIL

A. Topsoil shall be friable clay loam surface soil reasonably free of clay lumps, stones, weeds, roots and other objectionable material, a product of on site operations.

2.03 SOIL RETENTION BLANKETS

A. Soil retention blankets where shown on the plans shall be photodegradable or biodegradable excelsior blankets or woven paper mats commercially manufactured for installation on bare soils to protect construction areas from washing. Blankets shall be installed snugly over the area to be protected using six inch long "U" shaped wire staples on 2'-0" centers along edges add at staggered 4'-0" spacing on the mat face. No gaps shall be left between adjoining mats. Blankets shall be equal to AMXCO "Curlex" or Gulf States Paper Company's "Hold-Gro" woven paper mesh.

2.04 FIRE ANT INSECTICIDE

A. Spot treat fire ant insecticide in the entire area of seeding as Per Section 02930 Planting.

2.05 FERTILIZER FOR FERTILIZING

A. (Tank Mix) shall be 13-13-13 grade, pelleted, uniform in composition, free flowing, and suitable for application with approved equipment. The fertilizer shall be delivered to the site in bags or other convenient containers, each fully labeled, conforming to the applicable state fertilizer laws, and bearing the name or trademark and warranty of the producer.

2.06 WOOD CELLULOSE FIBER MULCH

A. Wood cellulose fiber mulch, for use with the hydraulic application of grass seed and fertilizer, shall consist of specially prepared wood cellulose fiber. It shall be processed in such a manner that it will not contain germination or growth inhibiting factors. It shall be dyed an appropriate color to allow visual metering of its application. The wood cellulose fibers shall have the property of becoming evenly dispersed and suspended when agitated in water. When sprayed

uniformly on the surface of the soil, the fibers shall form a blotter-like groundcover which readily absorbs water and allows infiltration to the underlying soil. Weight specifications from suppliers for all applications shall refer only to air dry weight of the fiber, a standard equivalent to 19 percent moisture. The mulch material shall be supplied in packages having a gross weight not in excess of 100 pounds and be marked by the manufacturer to show the dry weight content. Suppliers shall be prepared to certify that laboratory and field testing of their product has been accomplished and that it meets all of the foregoing requirements.

2.07 SLURRY MIX COMPONENTS PER ACRE

Wood Cellulose Fiber Mulch	2,200 pounds
Grass Seed	As Specified
Fertilizer (13-13-13)	As Specified

PART 3 EXECUTION

3.01 INSPECTIONS

- A. Surfaces indicated to be seeded shall be inspected to verify that all preparatory work in the area has been completed. Seeding shall not start until all preparatory work has been completed. Requests for inspections shall be made at least two days prior to anticipated date of inspection.

3.02 PREPARATION

- A. All areas to receive seed shall be stripped and/or treated with a contact herbicide prior to seeding as necessary to remove weeds, unless otherwise noted on drawings.
- A. Lime: These materials shall consist of commercial quality ground limestone and shall be added at the rate of two (2) tons per acre.
- B. Areas to receive seeding shall be loosened by manual or mechanical means to a depth of 1 1/2 inches, leveled and fine graded by hand raking. All stone (1" in diameter and larger in the top 2" of soil) are to be removed, tree stumps, brush, roots, vegetation, rubbish and other foreign matter shall be removed from the site. No foreign matter may be buried on the site. All tree stumps must be removed to a depth of two (2) feet below finish subgrade.
- D. Grade site for even and consistent slopes as per Section 02930 - Planting, Paragraph 3.01.

3.03 APPLICATION

- A. Special Mulching Equipment and Procedures: Hydraulic equipment used for the application of fertilizer, seed, and slurry of prepared wood fiber mulch shall have a built-in agitation system with an operating capacity sufficient to agitate, suspend, and homogeneously mix a slurry containing up to forty (40) pounds of fiber plus a combined total of seventy (70) pounds of fertilizer solids for each one hundred (100) gallons of water. The slurry distribution lines shall be large enough to prevent stoppage. The discharge line shall be equipped with a set of hydraulic spray nozzles which provide even distribution of the slurry on the slopes to be seeded. The slurry tank shall have a minimum capacity of eight hundred (800) gallons and shall be mounted on a traveling unit which may be either self-propelled or drawn with a separate unit which will place the slurry tank and spray nozzles within sufficient proximity to the areas to be

seeded so as to provide uniform distribution without waste. The Owner's Representative may authorize equipment with smaller tank capacity provided that the equipment has the necessary agitation system and sufficient pump capacity to spray the slurry in a uniform coat.

- B. Mixing: Care shall be taken that the slurry preparation takes place on the site of the work. Spraying shall commence immediately when the tank is full.
- C. Operators of hydromulching equipment shall be thoroughly experienced in this type of application. Apply specified slurry mix in a motion to form a uniform mat at specified rate. The operator shall spray the area with a uniform, visible coat by using the green color of the wood pulp as a guide. Keep hydromulch within areas designated and keep from contact with other plant material. Slurry mixture which has not been applied within four (4) hours of mixing shall not be used and shall be removed from the site.
- D. After installation, the Contractor shall not operate any equipment over the covered area. Immediately after application, thoroughly wash off any plant material, planting areas, or paved areas not intended to receive slurry mix. Keep all paved and planting areas clean during maintenance operations.
- E. After a stand of grass has been established and in the fall (September 15 through November 15), wildflower seed shall be broadcast in designated area. Area shall be worked slightly to achieve acceptable seed / soil contact.
- F. Seeded Areas: If, in the opinion of the Consultant, unplanted skips and areas are noted after hydromulching, the Contractor shall be required to seed the planted areas with the grasses that were to have been planted at no additional cost to the Owner.

3.04 MAINTENANCE OF HYDROSEEDED AREAS

- A. After installation, hydroseeded areas shall be watered in an amount and as often as necessary to keep seed beds moistened to their full depth for a period of 2 weeks.
- B. After initial 2 weeks of watering, seeded areas shall be watered and maintained to insure a healthy, vigorous growth throughout the installation period and the landscape maintenance period.

3.05 MAINTENANCE

- A. Seeded areas shall be maintained in good condition throughout the duration of the project and the maintenance period in accordance with the maintenance described in Section 163.

END OF SECTION 167

SECTION 301
Site Preparation and Erosion Control

1. Scope of Work

The contract work to be performed under this section of the specifications includes furnishing all labor, materials, equipment, implements, transportation, supplies and supervision for performing all operations in connection with site clearing, site grading and disposal of refuse.

2. Clearing and Grubbing

A. Description

"Clearing and Grubbing" shall consist of the removal and disposal of trees, stumps, brush, roots, vegetation, logs, rubbish and other objectionable matter.

B. Construction Methods

The Construction Site shall be cleared of brush, logs, rubbish, trees and shrubs, except such trees and shrubs and certain areas designated by the Consultant for preservation. Those trees, shrubs and other landscape features specifically designated by the Consultant for preservation shall be attentively protected from abuse, marring, or damage during construction operations. Continual parking and/or servicing of equipment under the branches of trees designated for preservation will not be permitted.

3. Burning of Brush

When burning of brush is permitted, the following shall govern:

The Contractor will be responsible for compliance with all federal, state or local laws and regulations relative to the building of fires. The City of Rockwall Fire Department and the Texas Forestry Service shall be notified of the intention to burn before burning any brush or other debris. Brush piles and fires shall be controlled as to size to eliminate possible dangers of forest or grass fires.

Brush to be disposed of by burning shall be burned at locations that will avoid all hazards, such as damage to existing structures, construction in progress, trees and vegetation. Disposal by burning shall be kept under constant attendance until the fires have burned out or have been extinguished.

4. Site Grading

A. Finish Grading

All areas which have been regraded or stripped of top soil shall be scarified, leveled and brought to an accurate subgrade. Stripped top soil or top soil imported for the seed and or sod bed shall be spread after subsoil fills are properly compacted, meeting the approved finish grade and shall be at least six inches deep when compacted.

1. Perform fine grading within Contract limits, including adjacent transition areas, where required, to new elevations, levels, and contours indicated. Provide subgrade surfaces parallel to finished surface grades. Provide uniform levels and slopes.
2. Grade surface to ensure areas drain away from structures and to prevent ponding and pockets of surface drainage. Provide subgrade surfaces free from irregular surface changes. Provide subgrade surface free of exposed boulders or stones exceeding 2 inches in greatest dimension in lawn areas.

3. Provide adequate drainage of the working area at all times.
4. Fine grade soil eliminating rough and low areas to ensure positive drainage. Maintain levels, profiles, and contours of subgrades.
5. Remove stones, roots, weeds, and debris while raking topsoil. Rake surface clean of stones 1 inch or larger in any dimension and of all debris.
6. Fire Ant Control - Fire ants shall be controlled with spot application of insecticide as necessary. Apply after dew has dried and when no rain is expected for 6 hours. Spot treat entire area of planting/grassing.

5. Seeding for Erosion Control

"Seeding for Erosion Control" consists of ground preparation, providing for sowing of seeds, fertilizing, mulching, and other management practices along and across such areas as are designated on the plans and in accordance with these specifications.

A. Materials

1. The accompanying tables consist of the specified "highway mix." All seed must meet the requirements of the Texas Seed law including the labeling requirements for showing pure live seed (PLS = purity x germination), name and type of seed. Seed furnished shall be of the previous season's crop and the date of analysis shown on each bag shall be within nine months of the time of delivery to the project. Seed shall be furnished and delivered in separate bags or containers. A sample of seed shall be furnished for analysis and testing when directed by the Consultant. The amount of seed planted per acre shall be of the type specified below and shall equal or exceed the following percentages for purity and germination or an equivalent amount of pure live seed. All cool season plant seed shall be treated with a fungicide; additionally, all legumes shall be inoculated.

<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>
Bermuda and Giant Bermudagrass (Hulled)	<i>Cynodon dactylon</i>
Green Sprangletop	<i>Leptochola dubia</i>
Bahiagrass (Pensacola)	<i>Paspalum notatum</i>
Annual Rye	<i>Lolium multiflorum</i>
Oats	<i>Avena sativa</i>
Tall Fescue	<i>Festuca arundinacea</i>
Western Wheatgrass	<i>Agropyron smithii</i>
Wheat	<i>Triticum aestivum</i>
Texas Bluebonnet	<i>Lupinus subcarnosus</i>
White Clover	<i>Trifolium repens</i>
Hairy Vetch	<i>Vicia villosa</i>
Crimson Clover	<i>Trifolium incarnatum</i>
Sudangrass	<i>Sorghum vulgare</i> var. <i>sudanense</i>

2. Lime and Fertilizers: These materials shall consist of commercial quality ground limestone and commercial chemical fertilizer containing stated ratios of nitrogen, phosphorous and potash. The latter shall be transported and stored in containers to insure proper protection and handling. Ratio of nitrogen, phosphorous, and potash nutrients shall be 1:1:1 per Consultant's instructions and applied at a rate of one half (0.5) pounds of nitrogen per one thousand (1000) square feet. The fertilizer shall be dry and in good physical condition. Fertilizer that is powdered or caked will be rejected. Distribution of the fertilizer for the particular item of work will shall meet the approval of the Consultant. Additionally, add lime at the rate of two (2) tons per acre.

B. Planting Season

All planting shall be done between the dates specified except as specifically authorized in writing.

The pure live seed planted per acre shall be of the type specified with the mixture, rate, and planting dates as follows except as specifically shown on plans.

Additionally, seeding for temporary erosion control shall be done when specified on the plans or directed by the Consultant. These measures shall consist of the sowing of cool season plant seeds and the work and materials as required within this contract.

Planting Date	Mixture for Clay or Tight Soils	Mixture for Sand or Sandy Soils
Apr. 15 to Sept. 15	Green Sprangletop, 1.2 lbs. Bermudagrass, 6.9 lbs.	Green Sprangletop, 1.2 lbs. Bermudagrass, 6.9 lbs. Bahagrass (Pensacola), 10.8 lbs.
Oct. 1 to Dec. 15	Annual Rye, 1.0 lbs. Oats, 4.0 lbs Tall Fescue, 1.0 lbs. Western Wheatgrass, 2.0 lbs. Wheat, 4.0 lbs. Texas Bluebonnet, 15.0 lbs. White Clover, 1.0 lbs. Hairy Vetch, 13.0 lbs. Crimson Clover, 1.0 lbs. Sudangrass, 2.0 lbs.	Annual Rye, 1.0 lbs. Oats, 4.0 lbs Tall Fescue, 1.0 lbs. Western Wheatgrass, 2.0 lbs. Wheat, 4.0 lbs. Texas Bluebonnet, 15.0 lbs. White Clover, 1.0 lbs. Hairy Vetch, 13.0 lbs. Crimson Clover, 1.0 lbs. Sudangrass, 2.0 lbs.

C. Preparation of Seed Bed

Where existing undistributed soil is satisfactory, the seed bed shall be prepared by plowing or scarifying to a depth of at least four (4) inches, then harrowing and/or dragging thoroughly to smooth the surface. Where existing top soil is not acceptable for grass growth six inch minimum thickness of approved top soil shall be furnished and installed. Prevent erosion of the finish grading or ground surface. Add and disc in fertilizer with a nutrient ratio of 1:1:1 at a rate of one half (0.5) pounds nitrogen per one thousand (1000) square feet. Top soil shall be harrowed or dragged, watered and rolled lightly, to form a smooth and uniform seed bed. The seed bed shall be cultivated sufficiently to reduce the soil to a state of good tilth. The seed-bed shall be deemed in a state of good tilth when the soil particles on the surface are small enough and lie closely enough together to prevent the seed from being covered too deep for optimum germination. Cultivation of seed-bed will not be required in loose sand where depth of sand is four (4) inches or more.

After the designated areas have been completed to the lines, grades and cross sections shown on the plans and as provided for in other items of the contract, seeding of the type specified

shall be performed in accordance with the requirements hereinafter described. Seeding shall be consistent and uniform.

D. Broadcast Seeding

The seed or seed mixture in the quantity specified shall be uniformly distributed over the areas shown on plans or where directed. If the sowing of seed is by hand, rather than by mechanical methods, the seed shall be sown in two directions at right angles to each other. If mechanical equipment is used, all varieties of seed as well as fertilizer may be distributed at the same time provided that each component is uniformly applied at the specified rate. After planting, the planted area shall be rolled with a corrugated roller of the "Cultipacker" type. All rolling of the slope areas shall be on the contour. When seed and fertilizer are to be distributed as a water slurry, the mixture shall be applied as in accordance to SECTION 0167 - HYDROMULCHING, within this contract.

E. Maintenance and Acceptance

All seeded areas shall be watered and maintained until a thick stand of grass is established. After three to four weeks of favorable weather, bare spots shall be recultivated, reseeded, raked, and rolled as in the original work. Maintenance, including mowing and fertilizing, shall continue until this work is approved by the Owner.

Grass will be acceptable after a minimum of two (2) mowings by the Contractor and grass is solid, healthy and weed-free with 95% coverage and no bare spots exceeding one (1) square foot in size.

6. Sodding for Erosion Control

"Sodding for Erosion Control" shall consist of providing and planting Bermuda grass sod or other acceptable sod along or across such areas as are designated herein and in accordance with specification requirements herein outlined.

A. Materials

1. The sod shall consist of live, growing Bermuda grass or other acceptable sod secured from sources where the soil is fertile. Bermuda sod shall have a healthy, virile root system of dense, thickly matted roots throughout the soil of the sod for a thickness of at least three (3) inches. St. Augustine sod shall have a healthy, virile root system of dense, thickly matted roots throughout the soil of the sod for a minimum thickness of one (1) inch. The Contractor shall not use sod from areas where the grass is thinned out, nor where the grass roots have been dried out by exposure to the air and sun to such an extent as to damage its ability to grow when transplanted. The sod shall be free from noxious weeds or other grasses and shall not contain any matter deleterious to its growth or which might affect its subsistence or hardness when transplanted. Unless the area has been closely pastured, it shall be closely mowed and raked to remove all weeds and long-standing stems. Sources from which sod is to be secured shall be approved by the Consultant.

Care shall be taken at all times to retain native soil on the roots of the sod during the process of excavating, hauling and planting. Sod material shall be kept moist from the time it is dug until planted. When so directed by the Owner, the sod existing at the source shall be watered to the extent required prior to excavating. Sod material shall be planted within three (3) days after it is excavated. Sod delivered to the site in an unhealthy condition shall be rejected by the owner.

2. Lime and Fertilizers: These materials shall consist of commercial quality ground limestone and commercial chemical fertilizer containing stated ratios of nitrogen, phosphorous and potash. The latter shall be transported and stored in containers to insure proper protection and

handling. Ratio of nitrogen, phosphorous, and potash nutrients shall be 1:1:1 per Consultant's instructions and applied at a rate of one half (0.5) pounds of nitrogen per one thousand (1000) square feet. The fertilizer shall be dry and in good physical condition. Fertilizer that is powdered or caked will be rejected. Distribution of the fertilizer for the particular item of work will shall meet the approval of the Consultant. Additionally, add lime at the rate of 2 tons per acre.

B. Preparation of Sod Bed

1. Where existing undistributed soil is satisfactory, the sod bed shall be prepared by plowing or scarifying to a depth of at least four inches, then harrowing and/or dragging thoroughly to smooth the surface. Where existing top soil is not acceptable for grass growth six inch minimum thickness of approved top soil shall be furnished and installed. Prevent erosion of the finish grading or ground surface. Add and disc in fertilizer with a nutrient ratio of 1:1:1 at a rate of one half (0.5) pounds nitrogen per one thousand (1000) square feet. Top soil shall be harrowed or dragged, watered and rolled lightly, to form a smooth sod bed. Contractor shall allow for the thickness of the sod when preparing the sod bed to ensure final plan elevations are achieved. Prior to laying sod, water the sod bed to a depth of approximately 6".

After the designated areas have been completed to the lines, grades and cross sections shown on the plans and as provided for in other items of the contract, sodding of the type specified shall be performed in accordance with the requirements hereinafter described. Sodding shall be solid and laid in strips.

C. Sodding

1. Solid Strip Sodding. At locations on the plans, or where directed, sod strips shall be carefully placed on the prepared areas. Butt and push edges and ends against each other tightly, without stretching. Avoid gaps or overlaps. Stagger the joints in each row in a brick-like fashion, using a large sharp knife to trim corners, etc. Avoid leaving small strips at outer edges as they will not retain moisture. On slopes, place the turf pieces across the slope. To avoid causing indentations or air pockets avoid repeated walking or kneeling on the turf while it is being installed or just after watering. Sod shall be so placed that the entire designated areas shall be covered. Any voids left in the strip sodding shall be filled with additional sod and tamped. The entire sodded area shall be rolled with a heavy hand roller and tamped to form a thoroughly compact and smooth solid mass. Surfaces of block sod, which, in the opinion of the Owner, may slide due to the height or slope of the surface or nature of the soil, shall, upon direction of the Owner, be pegged with wooden pegs driven through the sod block to the firm earth, sufficiently close to hold the block sod firmly in place. No pegging is allowed on sports fields. Edges along curbs, drives, walkways, etc. shall be carefully trimmed and maintained until accepted.

2. When necessary, the sodded areas shall be smoothed after planting has been completed and shaped to conform to the cross section previously provided and existing at the time sodding operations were begun. Any excess dirt from planting operations shall be spread uniformly over the adjacent areas, or disposed of as directed by the Owner, so that the completed surface shall present a sightly appearance.

3. Sodded areas shall be thoroughly watered within 30 minutes after they are planted and shall be subsequently watered at such time and in a manner and quantity directed by the Owner until completion and final acceptance of the project by the Owner.

4. Any cracks, crevices or voids in the planted area shall be filled and smoothed using sharp, weed free sand. Repeat as necessary.

D. Maintenance and Acceptance

All sodded areas shall be watered and maintained until a thick stand of grass is established.

After three (3) to four (4) weeks of favorable weather, bare spots shall be resodded and rolled as in the original work. Maintenance, including mowing and fertilizing, shall continue until this work is approved by the Owner.

Grass will be acceptable after a minimum of two (2) mowings by the Contractor and grass is solid, healthy and weed-free with 95% coverage and no bare spots exceeding one (1) square foot in size.

7. SPECIAL PROJECT WARRANTY

Contractor shall furnish written warranty of turf for twelve (12) months after date of final acceptance, against defects including death and unsatisfactory growth except for conditions of Owner neglect or abuse by others.

Contractor will remove and replace turf found to be dead or in unhealthy condition during the warranty period.

8. SOIL RETENTION BLANKETS

Soil retention blankets where shown on the plans shall be photodegradable or biodegradable excelsior blankets or woven paper mats commercially manufactured for installation on bare soils to protect construction areas from washing. Blankets shall be installed snugly over the area to be protected using six inch long "U" shaped wire staples on 2'-0" centers along edges add at staggered 4'-0" spacing on the mat face. No gaps shall be left between adjoining mats. Blankets shall be equal to AMXCO "Curlex" or Gulf States Paper Company's "Hold-Gro" woven paper mesh.

9. MEASUREMENT AND PAYMENT

Grass seeding shall be measured for payment in square yards of seeded area completed in accordance with the plans and specifications. Seeding shall be paid for at the contract unit price per square yard, complete in place, as provided in the proposal and contract. The contract unit price shall be the total compensation for furnishing and placing all seed, for furnishing and placing all soil retention blankets, for all rolling and tamping, for all fertilizer and water; for disposal of all surplus material; and for all material, labor, equipment, tools and incidentals necessary to complete the work, all in accordance, with the plans and these specifications.

Solid strip sodding shall be measured for payment in square yards of sodded area completed in accordance with the plans and specifications. Solid strip sodding shall be paid for at the contract unit price per square yard, complete in place, as provided in the proposal and contract. The contract unit price shall be the total compensation for furnishing and placing all sod, for furnishing and placing all soil retention blankets, for all rolling and tamping, for all fertilizer and water, for disposal of all surplus material, and for all material, labor, equipment, tools and incidentals necessary to complete the work, all in accordance, with the plans and these specifications.

10. INTENT

The intent of this Section is for the Contractor to leave all excavated areas along the area or route of construction with a surface growth capable of resisting erosion. A secondary intent is to provide a pleasing appearance once construction is completed. Therefore, the Contractor shall include these items in his bid price at the time of submitting his bid. However, salvage and replacement of existing top soil and sod shall be considered an acceptable alternate to "seeding" or "sodding" provided, if in the opinion of the Consultant, adequate top soil and sod exists to properly cover the barren surfaces.

SECTION 01340
SUBMITTALS AND SUBSTITUTIONS

1. DESCRIPTION:

- A. Work Included: Make submittals required by the contract documents, and revise and resubmit as necessary to establish compliance with the specified requirements. The provisions of this section apply to required submittals, related to units of work, not to administrative submittals including payment requests, insurance certificates and progress reports. In addition to specific provisions of General and Supplementary Conditions related to submittals, specification sections of Divisions 2 through 16 contain submittal requirements. Specific requirements in other sections have precedence over general requirements of this section.
- B. Work Not Included:
- a. Unrequired submittals will not be reviewed by the Consultant.
 - b. The Contractor may require his subcontractors to provide drawings, setting diagrams, and similar information to help coordinate the Work, but such data shall remain between the Contractor and his subcontractors and will not be reviewed by the Consultant.

2. QUALITY ASSURANCE:

A. Coordination of Submittals:

- a. General: The General Contractor shall coordinate all submittals with progress schedule and actual progress of the work. Prior to transmittal to Consultant, carefully review and coordinate all aspects of each item being submitted. Submittals shall be reviewed by the Contractor and be verified by his signature and the date. Allow 2 weeks for Consultants's initial processing of submittals requiring review and return. Use special transmittal form to establish complete record of submittals. Provide copies required by governing authorities, which are in addition to copies specified for submittal to the Consultant.
- b. Verify that each item and the submittal for it conform in all respects with the specified requirements.
- c. By affixing the Contractor's signature to each submittal, the Contractor certifies that this coordination has been performed.

B. Substitutions:

- a. The contract is based on the standards of quality established in the contract documents. Substitutions will be considered only when substantiated by the Contractor's submittal of required data within thirty-five (35) calendar days after award of the contract.
- b. Do not substitute materials, equipment, or methods unless such substitution has been specifically approved in writing for this work by the Consultant.
- c. A Contractor desiring substitution shall furnish to the Consultant specifications, cut sheets, performance data, and shop drawings along with an itemized statement of any and all differences between the proposed substitute and the specified item which in any way affect the item's life expectancy, maintenance, operating conditions, and suitability for the job.

- d. The Contractor shall further state all modifications to the project work made necessary by such substitution. The Contractor shall bear all costs associated with said modifications.
3. SUBMITTALS: Make submittals of shop drawings, samples, substitution requests, and other items in accordance with the provisions of this Section.
4. SHOP DRAWINGS:
 - A. Scale and Measurements: Make shop drawings accurately to a scale sufficiently large to show all pertinent aspects of the item and its method of connection to the work.
 - B. Types of Prints Required:
 - a. Submit shop drawings in the form of three blueline or blackline prints of each sheet. Maintain one print as mark-up copy for record drawings. Consultant will retain one copy and the remainder will be returned.
 - b. Blueprints will not be acceptable.
 - C. Review comments of the Consultant will be shown on one set of prints when it is returned to the Contractor. The Contractor may make and distribute such copies as are required for his purposes.
5. MANUFACTURER'S LITERATURE:
 - A. Where contents of submitted literature from manufacturers includes data not pertinent to the submittal, clearly show which portions of the contents is being submitted for review.
 - B. Copies of Product Data: Submit the number of copies which are required to be returned, plus two copies which will be retained by the Consultant. Mark each copy to indicate actual product to be provided; show selections from among options in manufacturer's printed product data. Except as otherwise indicated, submittal is for information and record (Not for Consultant's approval). Maintain an additional copy at project site for reference purposes. Do not proceed with installation of manufactured products until a copy of related product data is in Installer's possession at project site.
6. SAMPLES:
 - A. Provide sample or samples identical to the precise article proposed to be provided. Identify as described under "Identification of submittals" below.
 - B. Number of Samples Required: Unless otherwise specified, submit three sets of samples, one set will be retained by the Consultant.
7. COLORS AND PATTERNS: Submit accurate color and pattern charts to the Consultant for selection. Except as otherwise indicated, sample submittals are for the Consultant's observation of color, texture, pattern and "kind", as applicable. Maintain a returned set at the project site for purposes of quality control comparisons.
8. SUBCONTRACTORS AND MATERIAL SUPPLIERS: Submit a list of the subcontractors and material suppliers with the names of the manufacturers of major items of material and equipment each proposes to furnish.
9. SCHEDULE OF VALUES: Submit a schedule of values to be approved by the Consultant and used to evaluate the Contractor's pay requests.

10. IDENTIFICATION OF SUBMITTALS:

A. Consecutively Number All Submittals:

- a. When material is requested for any reason, transmit under a new letter of transmittal and with a new transmittal number.
- b. On re-submittals, cite the original submittal number for reference.

B. Accompany each submittal with a letter of transmittal showing all information required for identification and checking.

C. On at least the first page of each submittal, and elsewhere as required for positive identification, show the submittal number in which the item was included.

D. Maintain an accurate submittal log for the duration of the work, showing current status of all submittals at all times. Make the submittal log available to the Consultant for his review upon request.

11. TIMING OF SUBMITTALS:

A. Make submittals far enough in advance of scheduled dates for installation to provide time required for reviews, for securing necessary approvals, for possible revisions and re-submittals, and for placing orders and securing delivery.

B. In scheduling, allow at least ten (10) working days for review by the Consultant following his receipt of the submittal.

C. Color Selections: Submit all color samples as soon as possible so that the Consultant may coordinate colors. The Consultant may choose to delay approval of submittals if all color samples are not in his hands and this delay will be the responsibility of the Contractor.

12. CONSULTANT'S REVIEW:

A. Review by the Consultant does not relieve the Contractor from responsibility for errors which may exist in the submittal data. The Consultant shall review such data for the conformance to the product specified and not verify dimensions in accordance with approved drawings. Checking of drawings is to be regarded as gratuitously assisting the Contractor and the Consultant or the Owner does not thereby assume responsibility for such errors or omissions as are discovered later. They must accordingly be made good by the Contractor irrespective of any approval by the Consultant at no additional cost to the Owner.

B. Revisions:

- a. Make revisions required by the Consultant.
- b. If the Contractor considers any required revisions to be a change, he shall so notify the Consultant.
- c. Make only those revisions directed or approved by the Consultant.

C. Consultant's Decision Final: The Consultant alone shall decide whether a proposed substitute is an acceptable equal to the product specified.

13. Copies of Miscellaneous Submittals: Except as otherwise indicated, provide copies as follows:

- a. Special Project Warranties: Two (2) executed copies, plus conformed copies as required in maintenance manuals.
- b. Specified Product Warranties: Two (2) executed copies, plus conformed copies as required in maintenance manuals.
- c. Coincidental Product Warranties: Single copy, plus copies as required in maintenance manuals.
- d. Inspection/Test Reports and Certificates: Where not processed as shop drawings or product data, provide two (2) copies plus copies required for maintenance manuals.
- e. Field Records: Four (4) copies, including one (1) copy which will be returned for inclusion in submittal of record documentation.
- f. Maintenance Manual: Two (2) bound copies.
- g. Record Drawings: Original maintained mark-up prints.
- h. Miscellaneous Record Documentation: Original maintained mark-up copy.

14. Architect's/Engineer's Action:

- 1. General: Refer to General Conditions for indication and definition of action by Consultant upon receipt and processing of submittals from Contractor. Submittals will be returned without action where received indirectly (not through Contractor).

Section 1640

Product Handling

DESCRIPTION

- A. Work Included: Protect products scheduled for use in the work by means including, but not necessarily limited to, those described in this Section. Protect all owner direct-purchase equipment delivered for use on this project.
- B. Related work:
 - a. Documents affecting work of this Section include, but are not necessarily limited to, General Considerations, Supplementary Conditions, and Sections of these Specifications.
 - b. Additional procedures also may be prescribed in other Sections of these specifications.

QUALITY ASSURANCE:

Include within the Contractor's quality assurance program such procedures as are required to assure full protection of work and materials.

MANUFACTURER'S RECOMMENDATIONS:

Except as otherwise approved by the Consultant, determine and comply with manufacturer's recommendations on product handling, storage, and protection.

PACKAGING:

- A. Deliver products to the job site in their manufacturer's original container, with labels intact and legible.
 - 1. Maintain packaged materials with seals unbroken and labels intact until time of use. Keep off the ground with pallets.
 - 2. Promptly remove damage material and unsuitable items from the job site, and promptly replace with material meeting the specified requirements, at no additional cost to the Owner.
 - 3. Weatherproof all cardboard shipping containers for storage with plastic wrap, tarpaulins or shelters. Warehouse products not designed for outdoor exposure.
- B. The Consultant may reject as non-complying such material and products that do not bear identification satisfactory to the Consultant as to manufacturer, grade, quality, and other pertinent information.

UNLOADING:

Furnish all equipment to unload shipments (including direct owner purchase equipment). Provide access for delivery trucks. Designate and protect all storage sites.

PROTECTION:

- A. Protect finished surfaces, including jambs and soffits of openings used as passageways, through which equipment and materials are handled. Protect fresh concrete.
- B. Provide protection for finished floor surfaces in traffic areas prior to allowing equipment or materials to be moved over such surfaces.
- C. Maintain finished surfaces clean, unmarred, and suitably protected until accepted by the Owner.
- D. Protect paints and other liquids from freezing.
- E. Secure all materials from theft. Provide lockable storage buildings or trailers.
- F. Inspect and inventory all shipments immediately noting any shipping damage or missing equipment. Notify the Consultant immediately.

REPAIRS AND REPLACEMENTS:

In event of damage, promptly make replacements and repairs to the approval of the Consultant and at not additional cost to the Owner.

End of Section 01640

**SECTION 1705
PROJECT CLOSEOUT**

PART I GENERAL

1.01 RELATED DOCUMENTS:

- A. The Uniform General Conditions and Supplementary General Conditions and applicable requirements of all Divisions of the Contract Specifications govern this section. In the event of conflict between specific requirements of the various documents; the more restrictive, the more extensive (i.e. more expensive) requirement shall govern.

1.02 GENERAL DESCRIPTION OF REQUIREMENTS:

- A. DEFINITION: Project Closeout is hereby defined to include requirements near the end of the Contract Time, in preparation for substantial completion acceptance, occupancy by Owner, reduction in or release of retainage, final acceptance, final payment, normal termination of contract, and similar actions evidencing completion of the work. Specific additional requirements for individual units of work are specified in Sections of Divisions 2-16.
- B. TIME of closeout is directly related to substantial completion and acceptance, and therefore may be either a single time period for the entire project, or a series of time periods for individual portions or phases of the project which have been certified as substantially complete at different dates.
1. This section is based on completion and acceptance of the entire project during a single time period.
 2. If the project is to be accepted in phases, whether by originally specified project scope or by subsequent agreement between the parties, then Project Closeout requirements shall pertain to each separately accepted portion or phase of the project; unless by written directive the Owner allows for these requirements to be done singularly upon anticipated acceptance of the final phase.
- C. REQUIRED DOCUMENTS for Project Closeout include, but are not necessarily limited to the following, which are required at various stages of project completion:
1. As-Built Record Drawings and Specifications
 2. Operating & Maintenance Manuals
 3. Record Approved Submittals and Samples
 4. Completed Punch Lists
 5. Final Release of Claims
 6. Consent(s) of Surety
 7. Evidence of turn over of spare parts
 8. Evidence of User Training

1.03 REQUIREMENTS AT VARIOUS STAGES OF COMPLETION:

A. SUBSTANTIAL COMPLETION:

1. Prior to requesting Consultant and Owner to schedule a substantial completion, or pre-final, inspection (for either the entire work or portions thereof as agreed to by the parties to the contract); complete the following and list known exceptions in request.
 - a. In progress payment request coincident with period of time anticipated for substantial completion, Contractor's payment request should reflect a minimum of 95% completion for all applicable work.
 - b. Submit to Consultant and Owner a complete copy of the Contractor's most current punch list covering the portions(s) of the project claimed as substantially complete.
 1. Such punch list shall indicate dates of Contractor re-checks and completion of work items noted.

2. All items remaining outstanding on the Contractor's punch list shall include a projected date of completion and/or correction with an explanation of why such is not presently completed.
 - c. Submit to the Consultant for review the full set of as-built blueline markups as described later in this section.
 - d. Submit to Consultant for review the preliminary copies of Owner's Operating and Maintenance (O&M) Manuals as described later in this section.
 - e. Obtain and submit releases enabling Owner's full and unrestricted use of the work and access to services and utilities, including (where applicable) operating certificates, and similar releases.
 - f. Deliver tools, spare parts, extra stocks of materials, and similar physical items to Owner.
- B. If Owner intends to occupy project upon substantial completion acceptance, contractor shall make final change-over of locks and transmit keys to owner, and advise owner's personnel to change-over in security provisions. Upon written directive from Owner, this task may be waived until final acceptance for the convenience of the contractor in completing punch list activity.
- C. Complete instructions of Owner's operating and maintenance personnel. Arrange for each installer of work requiring continuing maintenance (by Owner) or operation to meet with Owner's personnel, at project site, to provide basic instructions needed for proper operation and maintenance of entire work.
1. Include instructions by manufacturer's representatives where installers are not expert in the required procedures. Review maintenance manuals, record documentation, tools, spare parts and materials, identification system, control sequences, hazards, cleaning and similar procedures and facilities.
 2. For each whole system for which equipment data, operating manuals, and systems drawings are required; the Contractor shall provide engineers or technicians to instruct and train the Owner's personnel in the use, operation, and maintenance of the equipment.
 3. The training period shall be of sufficient duration to fully familiarize the Owner's personnel, with all instructions and procedures covered by the submitted equipment data, including such systems theory as is necessary to provide the Owner with trained and competent personnel to use, operate and functionally maintain the systems. All training shall be to the satisfaction of the Owner.
- D. Complete initial clean up requirements as described later in the section for the entire portion of the project claimed as substantially complete.
- E. Touch up and otherwise repair and restore marred exposes finishes.
- F. Substantial Completion Inspection Procedure:
1. Upon receipt of evidence of compliance with above noted requirements along with contractor's notice that work has been substantially completed, as evidenced by receipt of Contractor's punch list with completion and/or corrections noted; Owner and Consultant will schedule substantial completion inspection of the work. If status of work is found to be as indicated on Contractor's punch list, the Consultant will prepare substantial completion punch list noting all items requiring completion and/or correction.
 2. If investigation indicates that Contractor's punch list did not accurately reflect status of the work, or if corrections and/or completion has not been substantially resolved by the Contractor; the Inspection will be terminated and all Owner and A/E costs for scheduling and attendance at the resulting re-inspection(s) will be the responsibility of the Contractor.

B. RELEASE OF RETAINAGE:

1. If the Contractor wishes to apply for release of, or reduction in retainage prior to anticipated final

acceptance; the requirements of this paragraph shall apply.

2. Release of any retainage, or reduction in amount of retainage withheld, is strictly at the discretion of the Owner, regardless of Contractor compliance with requirements. All of the requirements noted for Substantial Completion Acceptance must be completed prior to application for release of contract retainage. In addition, meet the following requirements:
 - a. Submit affidavits of final release of claim from each subcontractor and supplier who provided materials and/or labor for the Project. Conditional releases may be acceptable for partial reduction in retainage.
 - b. Submit affidavit that all bills for the Project have been paid, or will be paid within thirty (30) days of Contractor receipt of final retainage.
 - c. Submit Consent of Surety to Release of Retainage.

C. FINAL ACCEPTANCE:

1. Prior to requesting Consultant and Owner to schedule Final Inspection for the Project, complete the following.
 - a. Prepare draft payment request showing 100% completion for each line item of the Schedule of Values. Submit with this draft all final releases and supporting documentation not previously submitted and accepted. Include Certificates of Insurance where applicable. Note that Final Payment (including final release of retainage) will not be issued until all work (including punch list items) has been completed, all requirements met, and Final Change Order has been processed.
 - b. Submit copy of Consultant's pre-final (or substantial completion) punch list, including evidence that each item has been completed or otherwise resolved.
 - c. Submit final meter readings for utilities, and similar data as of time of substantial completion or when Owner took possession of and responsibility for corresponding elements of the work.
 - d. Submit final record as-built drawings and specifications, two copies of all approved submittals, and operating & maintenance manuals as described later in this section. This includes specific warranties, maintenance agreements, product certifications and similar documents. Record closeout documentation must be acceptable to Consultant and Owner prior to issuance of final payment.
 - e. Complete final cleaning requirements, including touch-up of marred surfaces.
 - f. Submit consent of surety to Final Payment.
 - g. Revise and submit evidence of final and continuing insurance coverage complying with applicable insurance requirements.
2. Final Acceptance Inspection Procedure:
 1. Upon compliance with all above noted requirements, and following completion of the work required in the substantial completion punch list, provide written notice to the Consultant and Owner that the project is ready for Final Inspection.
 2. Upon receipt of evidence of compliance with above noted requirements for Final Acceptance; the Consultant and Owner will schedule a Final Acceptance Inspection.
 - a. If status of work is found to be as indicated by Contractor as being complete and in compliance with the conditions of the contract, the Consultant will provide written recommendation to the Owner to accept the project.
 - b. If, however, this investigation indicates that corrections and/or completion has not been resolved by the Contractor; the inspection will be terminated and all Owner and A/E costs for scheduling and attendance at the resulting re-inspection will be the responsibility of the Contractor. In case of remaining correction/completion items, the Contractor shall again notify the Consultant and Owner when all such have been resolved, and request re-inspection.
 - c. It is the intent of this Section that the Owner and Consultant provide two complete inspections of the Project; one at Substantial Completion and one at Final Acceptance.
 1. All Owner and Consultant costs for travel and man-hours for additional

inspections at either of these completion stages which are required either by failure of the Contractor to complete the noted punch list items or by erroneous notices that the work is ready for such inspections, will be the responsibility of the Contractor. Such costs will be deleted from the contract amount in Final Change Order.

PART 2 NOT USED

PART 3 EXECUTION

3.01 PROJECT CLEANING AT SUBSTANTIAL COMPLETION:

A. General:

1. The Contractor is required to maintain the project and site in a clean and orderly condition throughout the course of construction. In addition to continuous project cleaning, the following requirements are related to project close-out.
2. Special cleaning for specific units of work may also be specified in other sections of project specifications.
3. Provide final cleaning of the work consisting of cleaning each surface or unit of work to normal "clean" condition expected for a first-class building cleaning and maintenance program.

B. Comply with manufacturer's instructions for cleaning of all system components, equipment, and materials incorporated into the project.

C. The following "initial" final cleaning is to be accomplished immediately prior to the time the Contractor requests Substantial Completion Inspection:

1. Remove labels which are not required as permanent labels.
2. Clean exposed hard-surfaced finishes, including glass, metals, stone, concrete, painted surfaces, plastics, tile, wood, special coatings, and similar surfaces, to a dirt-free condition, free of dust, stains, films and similar noticeable distracting substances. Restore reflective surfaces to original condition.
3. Remove debris and surface dust from limited-access spaces including plenums, shafts, and similar spaces.
4. Clean concrete floors in non-occupied spaces; wet-mot and broom clean.
5. Clean light fixtures and lamps removing all dust and debris, so fixtures and lamps will function with full efficiency.
6. Remove crates, cartons and other flammable waste materials or trash from work areas. Building(s) shall be turned over to the Owner free of concealed garbage, trash and rodent infestation. If any of the preceding are revealed, or odors from them occur, they shall be removed by the Contractor at his expense. Restore property to its original condition where no improvements are shown.
7. Elevator shafts, electrical closets, pipe and duct shafts, chases, furred spaces, and similar spaces which are generally unfurnished, shall be cleaned and left free from rubbish, loose plaster, mortar drippings, extraneous construction materials, dirt and dust.
8. Lawn areas shall be mowed and edged and otherwise groomed.
9. Care shall be taken by workmen not to mark, soil or otherwise deface finished surfaces. In the even that finished surfaces become defaced, all costs for cleaning and restoring such surfaces to their originally intended condition shall be the responsibility of the Contractor.

3.02 PROJECT CLEANING AT FINAL ACCEPTANCE:

A. The following "final" cleaning is to be accomplished immediately prior to the time the Contractor request Final Acceptance Inspection:

1. Clean transparent materials, including mirrors and window/door glass, to a polished condition, removing substances which are noticeable as vision-obscuring materials.
2. Turn the work over in immaculate condition inside and outside including the premises. Mow and trim all lawn and landscaped areas.
3. Clean all work on the premises including walks, drives, curbs, paving, fences, grounds and walls. Slick surfaces shall be left with a clear shine. Cleanup shall include removal of smudges, marks, stains, fingerprints, soil, dirt, paint, dust, lint, labels, discolorations and other foreign materials.
4. Clean all finished surfaces on interior and exterior of project (again) including floors, walls, ceilings, windows, glass, doors, fixtures, hardware and equipment. Final wash and polish all natural finish metal on interior or exterior surfaces.
5. In addition to the cleaning specified above and the more specific cleaning required in various sections of the specifications, the building(s) shall be prepared for occupancy by a thorough cleaning throughout, including washing (or cleaning by approved methods) surfaces on which dirt or dust has collected, and by washing glass on both sides. Wash exterior glass using a window cleaning contractor specializing in such work.
6. Remove temporary buildings and structures, fences, scaffolding, surplus materials and rubbish of every kind from the site of the work.

3.03 CONTINUING INSPECTIONS:

- A. Cooperate with Owner's representatives by promptly responding to notification of warranty repairs or other corrective actions necessitated by work which is found to be defective or otherwise not to comply with Owner's requests to participate in inspections at end of each time period of such continuing commitments.
- B. Participate in general inspection of the work approximately one year beyond date(s) of Substantial Completion, and promptly make corrections to any items noted.

END OF SECTION

SECTION 2200 EARTHWORK

1. SCOPE: This section shall govern the furnishing of all labor, materials, tools, equipment, and of performing all operations required to do clearing, grubbing, drainage, excavation, filling, backfilling, and site grading.
2. CLEARING AND GRUBBING:
 - A. Areas on which construction is to be performed or on which fill is to be placed, shall be cleared of vegetation and rubbish. The roots of shrubs and trees shall be grubbed out.
 - B. The site shall be graded as shown on the plans. Where grading is not indicated on the plans, hillsides shall be graded to a stable slope and the site graded for drainage as in paragraph 3.0.
 - C. Salvage and stockpile topsoil for later installation on construction areas not otherwise covered by pavement, foundations or other structures.
3. DRAINAGE:
 - A. Excavation shall be performed in such a manner that the area of the site and area immediately surrounding, including slopes and ditches, will be continually and effectively drained. All excavations shall be kept dry by means of pumping or draining, where necessary. The Contractor shall be responsible for any and all damage resulting from dewatering, flushing, or draining of structures or excavations.
 - B. The slope and shape of drainage ditches shall be such as to minimize erosion and sedimentation.
 - C. Where natural topography of the area creates excessive slopes, ditches may be cascaded or lined.
4. EXCAVATION:
 - A. The Contractor shall perform excavation of every type of material encountered within the limits of the project and extend a sufficient distance to allow for placing and removing of forms, installation of piping and other work required for construction. Satisfactory excavation material free from waste, rubbish, trash, organic material, large rocks, waste concrete or other unsuitable material, shall be stored at the site for use as backfill. Any unsatisfactory material from excavation shall be transported from the site and disposed of as directed by the Consultant. Material required for fill or embankment in excess of that produced by excavation within grading limits shall be excavated from approved borrow areas.
 - B. The bottom of excavation shall be firm and capable of supporting the loads imposed on the soil. All excavation for major foundations shall be carried to solid ground regardless of depth specified on any drawing. No backfill shall be allowed on any major foundation excavation to meet required elevation except as specifically recommended in soil study, if a soils study has been conducted. Compacted fill shall be used for matching required elevations only where a small amount of settlement is not a major consideration.
 - C. Walls of excavations in earth not capable of self-support shall be adequately shored

SECTION 2200

or the excavation shall be enlarged so that loose earth does not infiltrate into space required for concrete, or produce a pressure on forms for concrete.

- D. Provisions shall be made for controlling water seepage into excavated areas by pumping, sheet piling, concrete seal coat or other suitable means depending on local field conditions.
 - E. Planning of foundation work shall be such as to minimize or eliminate the need for excavation adjacent to an already poured major foundation.
 - F. Excavation for concrete foundations, service pits, and other work shall be of ample dimensions to allow for forming of the concrete work if required.
 - G. Where excavation is required for many footings in a general area, the entire area may be excavated.
 - H. If underground obstructions are encountered which are not shown on the drawings, the Contractor shall request instructions from the Consultant before proceeding with the work.
 - I. Excavated material in excess of requirements for backfill shall be spoiled in the area and leveled for proper drainage as directed by the Consultant, Disposal of such materials shall be on the Owner's property.
 - J. Such deleterious materials, encountered during excavation, which may be deemed as unsuitable for surface soil shall be disposed of "off-site" at the Contractor's expense and as the Contractor's responsibility.
5. EXISTING STRUCTURES: Existing fences, buildings, and structures and/or utilities of any character, where so shown or noted on the drawings or designated by the Consultant, shall not be removed or disturbed by the Contractor, unless approved by the Consultant.
6. BACKFILL OR FILL:
- A. Excavated areas shall be backfilled to the grade designated on the engineering drawings.
 - B. Prior to deposition of backfill, all form lumber shall be removed from concrete surface.
 - C. Backfill material shall be obtained from excavated soil, surplus earth from grading or from a designated suitable source. No topsoil or material containing vegetation or other rottable material shall be used as backfill material.
 - D. Fill dirt shall be deposited in successive lifts, six inch maximum depth, with each lift spread and compacted to plan specified density as determined by ASTM Specifications until grade is firm, unyielding and shaped to the required contour.
 - E. All backfill material for structures or pipe shall be placed in uniform horizontal layers (not exceeding 12 inches in depth) and shall be compacted by pneumatic tamping to 90% maximum Standard Proctor Density, ASTM D-698. Material shall be approved by the Consultant.
7. DENSITY TESTING: Density shall be measured in the field in accordance with ASTM D1556, D2167, or D2922. "Maximum Density" shall mean the maximum dry density as

defined by ASTM D698. Density testing shall be performed by a commercial testing laboratory selected by the Consultant. The Owner shall pay for initial testing of compacted backfill for proper density as necessary. However, should the backfill fail to meet the minimum requirements of the specifications all subsequent testing for density shall be at the Contractor's expense. Tests performed for the convenience of the Contractor shall be at his own expense.

8. DISPOSAL:

- A. Debris unearthed during excavation shall be disposed of "off-site" and shall be the responsibility of the Contractor.
- B. Salvageable materials exposed during excavation shall be disposed of as directed by the Consultant. In all events, the Consultant shall determine which material shall be classed as salvageable and which shall be classed as debris.

9. FINAL SITE GRADING: Uniformly smooth grading of all areas on drawings in which finished contours and elevations are indicated, including excavated and filled sections, shall be accomplished. The finished surface shall be compacted, free from irregular surface changes, and reasonably smooth. The degree of finish shall be that ordinarily obtained from a machine graded operation except for sports fields and areas within 20 ft. of structures, which shall each be hand raked. Grading shall be such as to assure drainage away from the structures. Spread topsoil (salvaged and stockpiled at start of earthwork) to a depth of not less than four (4) inches over all bare earth, subsoil, and rock. Before completion and final acceptance, the Contractor shall refill and dress any area which has settled or washed away.

10. PAYMENT: Separate payment for work performed under this section of the specifications is provided only if a separate pay item is shown in the proposal. Otherwise it is considered subsidiary to other bid items and payment shall be made under the bid item to which it pertains.

END OF SECTION 2200

SECTION 2200

SECTION 02231
SUBGRADE PREPARATION AND COMPACTION

1. DESCRIPTION: This section shall govern the scarifying, blading and rolling of the subgrade to obtain uniform texture and density throughout the required depth as shown on the Plans.
2. CONSTRUCTION METHODS: The subgrade, under any structure to be constructed under this contract shall be excavated and shaped in conformity with the typical sections shown on the Plans and to the lines and grades established by the Consultant. All unstable or otherwise objectionable material shall be removed or broken off to a depth of not less than six inches below the surface of the subgrade. Holes or depressions resulting from the removal of such material shall be backfilled with suitable material compacted in layers not to exceed six inches. All soft and unstable material and other portions of the subgrade which will not compact readily or serve the intended purpose shall be removed as directed.

The subgrade shall be scarified, bladed and compacted in the manner directed in the paragraph on "Finishing and Compaction." The surface of the subgrade shall be finished to line and grade as established, and be in conformity with the typical sections shown on the Plans. Any deviation in excess of one-half inch in cross section and in a length of sixteen feet measured longitudinally shall be corrected by loosening, adding or removing material, reshaping and compacting by sprinkling and rolling. Material excavated in the preparation of the subgrade shall be disposed of as directed by the Engineer.

3. FINISHING AND COMPACTION: The subgrade course, including an area one foot back of the proposed construction line, shall be sprinkled as required and rolled until a uniform compaction and the required density is obtained. Compaction of the subgrade may be done using any suitable rolling equipment. However, required densities must be met. Should the Consultant feel that too much time is being required to obtain those densities he can require that a heavy pneumatic roller be applied. Rolling shall continue until the subgrade has been compacted to ninety-five percent of the Modified A.A.S.H.O. Density (A.S.T.M. Method D-1557) within three percent of optimum moisture content unless otherwise shown on the plans. Failing density tests will be retested at Contractor's expense.

Rolling shall progress gradually from the sides of the center of the lane under construction by lapping uniformly each proceeding track by at least twelve inches. After rolling and watering, the subgrade shall be checked by the use of string line or instrument and all portions that do not conform to the lines and grades as shown on the Plans shall be scarified for at least six inches, corrected and re-compacted to correct elevation.

Until the subgrade is covered, the subgrade shall be maintained free from cuts and depressions, in a smooth and compacted condition true to lines and grade and to the density requirements contained herein. All of the Contractor's hauling and other equipment used in such a way as to cause rutting and raveling of the subgrade shall either be removed from the work or suitable run-ways or other equivalent means shall be provided to prevent rutting.

The Contractor shall be responsible for maintaining and protecting the subgrade for the entire length of the project.

During construction grading of the subgrade shall be conducted so that berms of earth or other material do not prevent immediate drainage of water away from the work. Ditches and drains along the subgrade shall be maintained so as to drain effectively.

4. BASIS OF PAYMENT: Subgrade preparation and compaction will not be paid for directly, but will be considered subsidiary to the project bid, which price will be full compensation for

removing excess material, shaping, fine grading and compacting the subgrade; for furnishing and hauling all materials, blading, shaping, rolling and finishing, and all labor, tools and incidentals necessary to complete the work. Payment will not be made for unauthorized work.

END OF SECTION

**SECTION 2590
JOB CLEAN UP**

1. DESCRIPTION: After construction work has been completed, there shall be removed from the job site all debris, trash, excess materials, equipment, etc., occasioned by the work and the construction site shall be left in a neat appearing and workmanlike condition before final acceptance. All excess excavated materials are to be disposed of as directed. Waste heaps will be permitted only as directed. Where the construction covers a considerable area as a water line or sewer line, the Contractor shall at the direction of the Consultant cleanup the streets and/or alleys and leave them in a usable condition as the job progresses.
2. BASIS OF PAYMENT: Payment for cleaning up will be included in the unit price bid for the particular part of the work that necessitates the cleaning up. No other payments will be made

END OF SECTION

SECTION 02800 TRAIL SYSTEM

1. GENERAL: Contractor shall furnish all labor, material, equipment, and supervision to install a trail system as shown on the plans, complete and in place. Work shall include clearing and grubbing the full width of the trail plus eight feet on each side or as indicated on the plans.
2. MATERIALS: Materials and proportions used in construction under this item shall conform to the requirements as specified on the plans and as further described in other related sections of these specifications.
 - a. Concrete trails: Section 3010 "Concrete for Structures".
 - b. Asphalt trails: Section 2503 "Hot Mix Asphaltic Concrete" or Section 02510 "One Course Surface Treatment".
 - c. Flexible base trail: Section 2233 "Flexible Base".
 - d. Decomposed Granite Trails: Section 2203 "Untreated Compacted Aggregate Tread Material".
3. CONSTRUCTION METHODS:
 - a. Unless otherwise noted on the plans clear and grub lines as marked by the Consultant to a distance of 8-feet each side of the improved trail. Remove overhanging branches to a height of 10-feet above any part of the final improved surface. Saw branches up to 3-inches diameter all the way back to the trunk or major branch higher than 10-feet above the trail. Saw larger branches back to the limits of clearing.
 - b. The subgrade shall be excavated and shaped to line, grade and cross-section and if considered necessary in the opinion of the Consultant, mechanically tamped, rolled, and sprinkled. Unless otherwise specified compaction shall be "ordinary" compaction and not "density controlled" compaction.
 - c. Forms shall be of wood or metal, of a section satisfactory to the Consultant, free from warp, and of a depth equal to the thickness of the finished work. They shall be securely staked to line and grade and maintained in a true position during the depositing of specified trail material. Curves shall be placed smoothly without angle points and straight sections shall show no deflection. Likewise, grade changes shall be made gradually without points of inflection.
 - d. No trail material shall be placed until the forms and subgrade have been approved by the Consultant. Finished trails may not have raised or offset joints, surface imperfections, or loose materials which may pose a hazard to trail users. Slopes shall be gentle, generally conforming to the slope of the land. No running slope shall exceed 5%. No side-to-side slope shall exceed 2%. Water shall not pond on trail surfaces. Concrete trails shall have a light broom finish. Unless otherwise shown on the plans, concrete trails shall have expansion joints every 50 feet and sawn crack control joints every eight feet and all exposed edges shall be tooled smoothly.
 - e. Remove all surplus construction materials. Hand grade disturbed soil next to the trail removing all clods and rocks. Areas bordering trails shall be backfilled or cut to 1-1-1/2-inches below trail surface with suitable topsoil. Repair all access routes disturbed during construction.
4. MEASUREMENT: Work and accepted material as prescribed for this item will be measured by the square yard of surface area of completed trail system. If hot mix asphalt or one course surface treatment is specified over a flexible gravel base, surface and base will be measured together and paid for per square yard of trail - not as separate pay items.

5. BASIS OF PAYMENT: The work performed and materials furnished as prescribed by this item and measured as provided under "Measurement" will be paid for at the unit price set forth in the proposal which prices shall be full compensation for clearing, preparing the subgrade; for furnishing and placing all materials, including all expansion joint materials; cleanup, and for all manipulation, labor, tools, equipment, and incidentals necessary to complete the work.

END OF SECTION 2800

**SECTION 3010
CONCRETE FOR STRUCTURES**

1. DESCRIPTION: This section shall govern the furnishing of all labor, materials, tools, plant performing all operations required to install all concrete and reinforcing steel, and completely finishing the concrete items in strict accordance with the requirements of these specifications and the applicable drawings and subject to all conditions of the contract including, but not limited to the following:

Drilled shafts and Under-reamed foundations
Slabs on grade
Walls
Grade Beams
Exterior Steps and Landings
Retaining Walls
Paving
Basement Columns
Sidewalks
Reinforcing Walls
Structures
Curb and Gutter

2. MATERIALS:

- A. Reinforcing Steel: Reinforcement shall conform to the requirements of Section 3210 of these specifications.

- B. Cement: The cement shall be either Type I or Type III of a standard brand of Portland Cement which shall conform to ASTM Specification C-150. The Contractor, if he so elects in order to facilitate his own operations, may use Type III cement.

All cement shall be protected against dampness, and no cement will be accepted which has become caked.

- C. Water: Water for use in concrete mixtures shall conform to the provisions of AASHTO Test Method T-26 for quality of water.

- D. Coarse Aggregate: The coarse aggregate shall consist of gravel, crushed stone, blast furnace slag or combinations thereof with a wear of not more than forty (40) percent when tested according to AASHTO Method T-96. Aggregate shall conform to the requirements of ASTM C-33.

The maximum size of coarse aggregate shall not be larger than one-fifth (1/5) of the narrowest dimension between forms of the member for which concrete is to be used nor larger than three-fourths (3/4) of the minimum clear spacing between reinforcing bars.

- E. Fine Aggregate: The fine aggregate shall consist of sand conforming to ASTM designation C-33. The sand shall not contain more than 1½ clay and shall not show darker than very light amber when tested by the colorimetric method.

The fine aggregate shall conform to the following grade requirements:

Retained on 3/8" screen.....0% by weight
Retained on 1/4" screen.....0% to 5% by weight
Retained on No. 20 sieve.....15% to 50% by weight
Retained on No. 100 sieve.....85% to 100% by weight

F. Admixtures:

a. ADMIXTURES FOR CONCRETE

GENERIC PRODUCT:	APPROVED PRODUCTS:	REQUIRED USAGE:
High Range Water Reducer (Super plasticizers) ASTM C-494 Type F/G	Master builders Rheobuild: 716-Temp. - 80 deg F 1000-Temp. - 80 deg F	ALL structural walls or other work requiring two sided forming and tightly confined concreting; concrete columns above grade; Concrete drops > 5'-0'
Air Entrainer ASTM C-260	Master Builders Micro Air	All concrete
Accelerator ASTM C-494 Type C	Pozzolith 555-Accelerator Pozzolith 122-HE (chloride) Pozzolith 20 (low temp)	Concrete placed on perm. steel floor and deck systems; bridge deck repair; concrete pavement patching; tilt walls
Retarder ASTM C-494 Types B/D	Pozzolith 100-XR	For delayed set; with approval of Engineer only

b. All concrete shall have air entrainment based on the maximum size coarse aggregate:

Maximum Size Aggregate	Total Air Percent
1½"	4.5%+/-1%
¾"	

c. Install admixtures per manufacturer's instructions.

3. CONCRETE QUALITY: The concrete shall be composed of Portland Cement fine aggregate, coarse aggregate, and water, all as specified herein.

The concrete shall be homogenous, readily placeable and uniformly workable. Unless noted otherwise on the plans, the minimum cement content, maximum allowable water content, and minimum compressive strength of the various classes shall conform to the following:

Class of Concrete	Min. Cement Content Sacks/ Cy/Yd	Max Water Content Gal/Sack of Cement	Minimum Compressive Strength psi @ 7 days	Minimum Compressive Strength psi @ 28 days	Minimum Beam Strength psi @ 7 days
A	5.0	6.5	2,000	3,000	500
B	4.5	7.0	1,700	2,500	330
C	4.0	8.0	1,300	2,000	600
S	6.0	5.0	2,500	3,600	600

The dry loose volume of coarse aggregate shall not exceed 0.82 cubic foot per cubic foot of finished concrete except in cases where the voids in the coarse aggregate as determined by standard test methods exceed 48 percent of the total dry loose volume. Where the voids

exceed 48 percent of the total dry loose volume, the dry loose volume of coarse aggregate shall not exceed 0.85 cubic foot of finished concrete.

The net amount of water shall be the amount added at the mixer, plus the free water in the aggregate, and minus the absorption of the aggregate based on a thirty-minute absorption period. No allowance will be made for evaporation of water after batching.

- A. Class Requirements: The following are maximum slumps and the class of concrete required for various types of construction. (Slump test prior to addition of plasticizers.)

<u>Type of Construction</u>	<u>Slump Inches Maximum</u>	<u>Class of Concrete</u>
Drilled Shafts & Underreamed Foundations	5	A
Slabs on Grade	4	A
Walls and Columns	3	A
Grade Beams	4	A
Structural Slabs & Beams	4	A
Driveways and Walks	4	A
Retaining Walls	4	A
Curb and Gutter	3	A

- B. Characteristics of Mix: Concrete shall be of such consistency as to insure the required workability and result in compact masses having dense, uniform surfaces. In cases where the characteristics of the aggregates are such that the maximum allowable amount of water, the consistency requirements cannot be satisfied, additional aggregates, mineral filler or aggregates of a different character may be furnished to produce the desired results. If these materials are not provided, then the mix design will be modified to insure proper workability for adding additional cement. Concrete temperature shall not be less than 50 degrees F nor more than 90 degrees F.

In general, the consistency of the concrete mixtures shall be such that:

- The mortar will cling to the coarse aggregate.
- The aggregates will not segregate in the concrete when it is transported to the place of the deposit.
- The concrete and mortar will show no free water when removed from the mixer.
- The surface of the finished concrete will be free from a surface film of "laitance".

Any concrete mix failing to meet the above outlined consistency requirement, although meeting the slump requirements, will be considered unsatisfactory, and the mix shall be changed to correct such unsatisfactory conditions. In cases where the characteristics of the aggregates furnished are such that, with the maximum allowable amount of water, the specified slumps and consistency requirements are not met, aggregates of an improved grading must be furnished and the mix design must be modified to meet the slump and consistency requirements by adding either cement or mineral filler, or both, as may be necessary. In case mineral filler is used, the combined total quantity of

mineral filler and fine aggregate passing the 100 mesh sieve shall not exceed twenty (20) percent of the weight of the fine aggregate.

It is the intent of these specifications to secure for every part of the work, and particularly so where the concrete is to be liquid containing, concrete of homogeneous structure having the required strength and resistance to weathering, which is free of honeycomb, concealed voids or other defects, and which for the various structures and appurtenances shall develop the minimum compressive strengths as indicted in these specifications.

The minimum quantity of cement and mixing water should be used that will safely produce concrete of the strength required, in order to minimize heat of hydration and shrinkage in the concrete.

4. MIXING CONDITIONS: The concrete shall be mixed in quantities required for immediate use, and any concrete which is not in place within thirty (30) minutes after being discharged from the mixer shall not be used. Re-tempering of concrete will not be permitted. Concrete improperly mixed shall not be placed in the structure. Ready-mixed concrete will comply with the following requirements:
- A. Central mixed concrete shall be mixed completely in a stationary mixer and the mixed concrete transported to the point of delivery in a truck agitator or in a truck mixer operating at agitator speed.
 - B. Shrink-mixed concrete shall be partially mixed in a stationary mixer, and the mixing completed in a truck mixer.
 - C. Transit-mixed concrete shall be completely mixed in a truck mixer.

Mixers and agitators shall be operated within the limits of capacity and speed of rotation as designated by the manufacturers.

When a stationary mixer is used for partial mixing of the concrete, the mixing time in the stationary mixer may be reduced to the minimum required to intermingle the ingredients (about 30 seconds).

When a truck mixer is used for complete mixing or to finish partial mixing in a stationary mixer, each batch of concrete shall be mixed not less than 50 nor more than 100 revolutions of the drum or blades at the rate of rotation designated by the manufacturer of equipment as mixing speed. Additional mixing, if any, shall be at the speed designated by the manufacturer of the equipment as agitating speed.

Delivery of concrete to the site of the work and its discharge from the truck mixer, agitator or non-agitating equipment shall be completed within ½ hour after the introduction of the mixing water to the cement and aggregates, unless otherwise authorized by the Engineer.

All transit mix delivery tickets shall have the time of departure from the plant as well as water, cement, aggregates and admixture contents.

Hand mixing of concrete will be permitted, it shall be done on a watertight platform. The fine aggregate and cement shall first be mixed until a uniform color is attained, and then spread over the mixing board in a thin layer. The coarse aggregate shall be thoroughly saturated with water, and it shall then be spread over the fine aggregate and cement in a uniform layer, and the whole mass turned as the additional water is added. After all ingredients have been

added, the mass shall be turned at least six times, or more if necessary, to make the mixture uniform in color and smooth in appearance. Hand mixed batches shall not exceed a two (2) bag batch volume.

5. FORMWORK: The Contractor shall provide forms that will produce correctly aligned concrete. The centering shall be true and rigid, and thoroughly braced both horizontally and diagonally. The forms shall be sufficiently strong to carry the dead weight of the concrete as a liquid without deflection, and tight enough to prevent leakage of mortar.

For exposed interior and exterior concrete surfaces of columns and walls, plywood or other approved forms, thoroughly cleaned and tied together with approved corrosion resistant devices shall be used.

Rigid care shall be exercised in seeing that all poured walls and columns are plumb and true and thoroughly cross-braced to keep them so.

Beveled strips shall be provided in a form angles and in corners of column and beam boxes for chamfering of corners where shown on drawings or directed by the Engineer.

The inside of the forms shall be coated with an approved oil or thoroughly wetted. Oil shall be applied before reinforcement is placed.

Temporary openings for cleaning and inspection shall be provided at the base of vertical forms and other places where they are necessary.

Forms may be removed at the following minimum times.

	*Over 95F.	70-95F.	60-70F.	50-60F.	Below 50
Walls	5 days	1 day	2 days	3 days	Do not remove forms until site cured test cylinder develops 50% of 28 day strength
Columns	7 days	2 days	3 days	4 days	
Beam	10 days	4 days	5 days	6 days	
Structural Slabs 5" thick or less	10 days	5 days	6 days	7 days	
Structural Slabs Over 5" thick	12 days	6 days	8 days	9 days	
Curb & Gutter	1 day	1 day	1 day	1 day	

*Where exposed surfaces of concrete can be effectively sealed to prevent loss of water, these times may be reduced to the 70-95 degrees F. time.

6. PLACING OF REINFORCEMENT:

- A. Metal reinforcement, at the time concrete is placed, shall be free from rust, scale, or other coating that will destroy or reduce the bond. All bars shall be bent cold. Straightening or rebending shall not be allowed which will injure reinforcement. Bars with kinks or bends not shown on the plans shall not be used.

- B. Metal reinforcement shall be accurately placed and adequately secured in position by concrete or metal chairs and spacers. In no case shall the clear distance between bars be less than 1", nor less than 1-1/3 times the maximum size of the coarse aggregate. All metal chairs, wire and spacers shall be galvanized.
- C. Splices shall have a length of not less than thirty (30) times the normal size of diameter of the reinforcement, except in the cases of welded splices, and shall be well distributed or else located at points of low tensile stress. No splices other than welded splices will be permitted at points where the section is not sufficient to provide a minimum distance of two inches between the splice and the nearest adjacent bar or the surface of the concrete. The bars shall be rigidly clamped or wired at all splices in a manner approved by the Engineer.
- D. The reinforcement of footings and other principal structural members in which the concrete is deposited against the ground shall have not less than 3" of concrete between the steel and the ground contact surface.

If concrete surfaces, after removal of the forms, are to be exposed to the weather or be in contact with the ground, the reinforcement shall be protected with not less than 2" of concrete over bars more than 5/8" in diameter and 1½" over bars 5/8" or less in diameter.

Concrete protection for reinforcement shall in all cases be at least 1½".

- E. Bend bars around corners in structural walls and footings. Do not splice bars at right angles in corners but rather lap splice 4 feet or more from corners if dimensions permit.
- F. No concrete shall be deposited until the Engineer has inspected the placing of the reinforcement and given permission to place concrete.

7. DEPOSITING CONCRETE:

- A. Before placing concrete, thoroughly clean the forms of wood chips, shavings or other debris. Do not deposit concrete in standing water.
- B. Before placing new concrete on or against concrete which has acquired its initial set, retighten forms, roughen hardened surfaces, clean off foreign matter and laitance, and saturate with water. Immediately before depositing new concrete, coat the contact surface with neat cement grout.
- C. Concrete shall be deposited, when practicable, in its final position without segregation, rehandling, or flowing. When possible, concreting shall be continuous until the section is complete.
- D. Concrete shall be spaded and vibrated with approved mechanical vibrator to maximum subsidence, without segregation, and adjacent to forms and joints.
- E. Slabs and beam stems shall be placed in one operation.
- F. Concrete columns and walls shall have been poured at least 2 hours before the floor system supported thereon is poured.
- G. When stoppage of concreting operations occurs for any reason, construction joints shall be placed either horizontally or vertically as needed, provided with keys to resist shear, and dowels to develop bond. Before concreting operations are resumed, the surface of the concrete shall be cut or chipped to remove all laitance and expose the aggregate.

- H. Water accumulating during placing should be removed. Concrete shall not be deposited in such accumulations.
 - I. Conveying and chuting of concrete shall be done only with equipment which will insure a continuous flow without segregation. Concrete without super plasticizers admixtures shall not be dropped more than five feet without a tremie or "elephant trunk". Super plasticized concrete may be dropped (free fall) from a height of 15 feet or less.
 - J. Construction joints in foundation walls, interior and exterior, shall be V chamfered unless otherwise shown. Location of joints shall be shown on the drawings or as approved by the Engineer.
 - K. In threatening weather, which may result in conditions that will adversely affect the quality of the concrete to be placed, the Engineer may order postponement of the work. Where work has been started and changes in weather conditions require protective measures to be used, the Contractor shall furnish adequate shelter to protect the concrete against damage from rainfall or damage due to freezing temperatures.
 - L. No concrete shall be placed without the approval of the Engineer when air temperature is at or below 40 degrees F. (taken in the shade away from artificial heat) and falling. If authorized by the Engineer, concrete may be placed when the air temperature is at 35 degrees F. and rising.
8. EXPANSION JOINTS: Expansion joints shall be of the type and size shown on the plans. Refer to Section 07111 "Construction Joints and Waterstops".
9. FLOOR HARDENER: All interior or exterior floors and loading docks having an exposed concrete surface shall be hardened with floor hardener as approved by the Engineer.
10. MONOLITHIC FLOOR FINISH: All slabs shall be given a monolithic finish, first tamping with a grill tamp to force coarse aggregate slightly away from the surface; then floated to the required finish level. The surface shall be trowled twice in order to produce a smooth, impervious surface.
- Abrasive non-slip floors where shown on the drawings shall be, or shall be equal to, Sonneborn Frictex H applied in strict accordance with the manufacturer's directions.
11. FINISHES: Finish all surfaces on inside of structures and to a distance of 1'-0" below finished ground on exterior of walls in accordance with SECTION 03011 "Surface Finishes for Concrete" Grade I, Class A, B, or C (one rub). Painting may also be required. Refer also to Section 09900 "Painting".
- Sidewalks and driveways will receive a light broom finish after leveling with a wooden float. Radius all exposed edges of slabs on grade.
12. CURING CONCRETE: Driveways, curbs and gutters, floors and vertical surfaces shall be sprayed with a curing compound meeting the requirements of Section 03012 to retard evaporation of water if spraying is not objectionable because of subsequent finish. Curing operations shall begin as soon as the concrete has attained initial set. All materials and facilities for curing concrete shall be on hand and ready for use before concrete is placed. Concrete shall be protected from freezing temperatures for a minimum of five (5) days after placement. Refer to Section 03012 "Membrane Curing".
13. WATER PROOFING: All concrete walls and floors in contact with process or ground waters

shall be treated with chemical coating equal to "Protecrete" which reacts chemically with concrete to form a crystalline vapor barrier. Unless noted, treatment is required only on the interior concrete surface. Apply per manufacturer's written instructions. Polyethylene vapor barrier, if shown on the plans, shall be 6 mil thickness, fungi resistant sheets fastened with adhesive backed polyethylene tape.

14. TEST ON CONCRETE: One set of three test cylinders shall be made by the Contractor for compressive strength tests performed by an approved independent testing laboratory (all at the expense of the Owner) for each thirty (30) cubic yard lot or a minimum of one set for each days pour. Slump test shall be made on each batch tested in accordance with ASTM designation C-143. Each of the test cylinders shall be tested at 7 days and 28 days for compressive strength. The Contractor shall coordinate tests with the Owner's designated laboratory.

If the average strength of the laboratory control cylinders for any portion of the structure falls below compressive strength required for the design, the Engineer shall order further standard ASTM test procedures to be performed at the Contractor's expense upon concrete sections in question. Should these further tests indicate that any concrete does not meet the requirements of these specifications, the concrete shall be removed and replaced with acceptable concrete by the Contractor and at Contractor's expense.

Copies of reports of all tests shall be furnished to the Engineer and Contractor as soon as available.

Tests on concrete shall conform to the following applicable ASTM designations:

ASTM C-173 or C-231 - Air Content of Freshly Mixed Concrete.

ASTM C-172 - Standard Method of Sampling Fresh Concrete.

ASTM C-143 - Standard Method of Slump Test.

ASTM C-39 - Standard Method of Test for Compressive Strength of Molded Concrete Cylinders.

ASTM C-31 - Standard Method of Making and Curing Concrete Compression and Flexure Text Specimen in the Field.

15. MEASUREMENT: The concrete quantities of the various classifications which constitute the completed and accepted structure will not be measured unless otherwise noted in the proposal, but will be considered as a part of the lump sum payment for the item constructed. If noted on the plans or in the Special Provisions measurement will be by the cubic yard in place.
16. PAYMENT: The concrete quantities if measured by the square or cubic yard will be paid for at the unit prices bid per square or cubic yard for the various classifications of concrete shown, which prices shall be full compensation for furnishing, hauling and mixing all concrete materials, placing, curing and finishing all concrete; all grouting and pointing; furnishing and placing all drains, expansion joints, metal flashing strips, reinforcing steel; and for all forms and falsework, labor, tools, equipment, and incidentals necessary to complete the work.

Otherwise all concrete shall be considered as a part of the lump sum price bid for the various items of construction. The lump sum price shall include full compensation for furnishing, hauling, and mixing all concrete materials, placing, curing, and finishing all concrete; all grouting and pointing; furnishing and placing all drains, forms, and falsework, labor, tools, equipment, and incidentals necessary to complete the work.

END OF SECTION 3010

Special Provisions

SPECIAL PROVISIONS

Phelps Lake Park City of Rockwall, Texas

1. The Owner will provide a benchmark and elevation only. It will be the Contractors responsibility to provide all necessary construction stakes for controlling alignment and grade.
2. The Consultant or an authorized representative of the City of Rockwall shall approve each stage of construction.
3. Each bidder shall become fully acquainted with the characteristics of the site and any anticipated special construction techniques shall be reflected in the bid.
4. It is the Contractor's responsibility to take **all precautions necessary** to not disturb trees existing on the site.
5. The locations for improvements shown on the plans are approximate and representative of the quantities required for the construction of the Project. Actual locations for improvements may be adjusted in the field to reduce negative environmental impacts and improve the aesthetics of the finished product. The Contractor will coordinate with the Consultant on final placement of facilities.
6. It is the Contractor's responsibility to coordinate with Mike Savioli at The Dock Doctors, LLC, 19 Little Otter Ln., Ferrisburgh, VT 05456 mike@thedockdoctors.com, 802-877-6756 for all of the kayak launch drawings and specs.
7. Portions of the project are located in a flood plain. It is the Contractor's responsibility to take all reasonable precautions necessary to protect the work from flood waters.

