GENERAL CONDTIONS AND TECHNICAL SPECIFICATIONS - EXHIBIT 2

FOR

CITY OF CARROLLTON

JOSEY RANCH FIELD 6 ADAPTIVE SPORTS FIELD

BID DOCUMENTS

City of Carrollton
1945 E. Jackson Road
Carrollton, Texas

GENERAL CONDITIONS FOR

CONSTRUCTION CONTRACT

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CITY OF CARROLLTON

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GENERAL CONDITIONS

1. CONTRACT DOCUMENTS

It is understood and agreed that the Advertisement for Bids, Instructions to Bidders, Proposal, Proposal Data, Contract Agreement, Owner's Purchase Order, Owner's Resolution, Performance Bond, Payment Bond, General Conditions, Special Conditions, Specifications, Council of Governments Standard Specifications for Public Works, (current edition), Drawings, Addenda, and Change Orders issued by the Owner, specifications, and engineering data furnished by the Contractor and accepted by the Owner, are contract documents. Additionally, any other written instruments, correspondence, etc., bound in the volume of the contract documents at the time of execution by the Owner and Contractor shall be "contract documents" whether specifically designated as such or otherwise.

It is the intent of the contract documents that they be read as a whole and that all portions of the contract be interpreted so as to give meaning to their terms. In the event of any conflict in the contract documents, handwritten provisions shall prevail over typewritten and typewritten provisions shall prevail over preprinted matter. Additionally, the following order of precedence shall govern among the various contract documents, with the first listed having precedence over any documents listed thereafter.

Scope of Work
Contract Agreement
Owners Resolution
Addenda to Contract Conditions and Specifications “and Plans”
Special Conditions
General Conditions
Technical Specifications
Contract Conditions
Contract Drawings
All other Contract Documents
General Design Standards
Facility Services General Building Standards
North Central Texas Council of Governments Standard Specifications for Public Works

The City reserves the right to let other contracts in connection with this work. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and execution of their work, and where required, shall properly connect and coordinate his work with theirs.

1.1 NO PREJUDICE AGAINST OWNER

It is understood and agreed by Contractor that Owner has independently prepared most of the Contract Documents and Contractor agrees that, notwithstanding any doctrine of law to the contrary, no presumption and/or prejudice against Owner shall be presumed against Owner (nor construed in favor of Contractor) by any court of competent jurisdiction in its interpretation of the Contract Documents.

2. DEFINITIONS

Words, phrases, or other expressions used in these contract documents shall have meanings as follows:

a. "Contract", "contract", or "contract documents" shall include the items enumerated above under CONTRACT DOCUMENTS.

b. "Owner", "Agency", or "Inspector" shall mean the City of Carrollton, named and designated in the Contract Agreement. All notices, letters, and other communication directed to the Owner shall be addressed and delivered to:

City of Carrollton
P.O. Box 110535
Carrollton, Texas 75011-0535

Attn: Engineering Department

c. "Contractor" shall mean the corporation, company, partnership, firm, or individual named and designated in the Contract Agreement, who has entered into this contract for the performance of the work covered thereby, and its, his, or their duly authorized representatives or its successors to the contract.

d. "Subcontractor" shall mean and refer only to a corporation, partnership, or individual having a direct contract with the Contractor for performing work covered by these contract documents, or its successors to the contract.

e. "Date of contract", or equivalent words, shall mean the date written on the Owner's Resolution, or the Owner's Purchase Order if a Resolution is not required, which shall also be the date written in the first paragraph of the Contract Agreement.

f. "Day" or "days", unless herein otherwise expressly defined, shall mean a calendar day or days of 24 hours each.

g. "The work" shall mean the equipment, supplies, materials, labor, and services to be furnished under the contract and the carrying out of all obligations imposed by the contract documents.

h. "Drawings" or "plans" shall mean all (a) drawings furnished by the Owner or Engineer as a basis for proposals, (b) supplementary drawings furnished by the Owner to clarify and to define in greater detail the intent of the contract drawings and specifications, (c) drawings submitted by the successful bidder with his proposal, provided such drawings are acceptable to the Owner, (d) drawings furnished by the Owner to the Contractor during the progress of the work, and (e) engineering data and drawings submitted by the Contractor during the progress of work.

i. Whenever in these contract documents the words "as ordered", "as directed", "as required", "as permitted", "as allowed", or words or phrases of like import are used, it shall be understood that the order, direction, requirements, permission, or allowance of the Owner is intended only to the extent of judging compliance with

the terms of the contract; none of these terms shall imply that the Owner has any authority or responsibility for supervision of the Contractor's forces or construction operations, such supervision and the sole responsibility therefor being strictly reserved for the Contractor.

j. Similarly the words "approved", "reasonable", "suitable", "acceptable", "proper", "satisfactory", or words of like effect and import, unless otherwise particularly specified herein, shall mean approved, reasonable, suitable, acceptable, proper, or satisfactory in the judgement of the Owner, to the extent provided in "i" above.

k. Whenever in these contract documents the expression "it is understood and agreed" or an expression of like import is used, such expression shall mean the mutual understanding and agreement of the parties executing the Contract Agreement.

l. "Official Acceptance" shall mean the Owner's written acceptance of all work performed under this Contract.

3. CONTRACTOR'S PRELIMINARY OBLIGATION

It is the responsibility of the bidder to deliver his proposal at the proper time and to the proper place. The proposal shall be delivered in a manila envelope with the appropriate job name on the outside. The mere fact that a proposal was dispatched by mail, express, or otherwise, will not be considered. The bidder must have his proposal in the hands of the proper official before closing time. Bids received after the advertised closing time will not be considered and will be returned unopened.

The Contractor, as successful bidder, shall furnish the required payment, performance and maintenance bonds each in the amount of 100% of the contract price, a valid power- of- attorney proving the agent has the authority to execute the bonds for the surety, and certificates of insurance and an executed contract, within (10) days of notice of award. A certified copy of the Board Resolution authorizing said persons to sign and bind the firm must be included with each copy of the Contract. If such Contractor fails to enter into a contract or execute bonds as herein provided, the City may annul the award and award the contract to the bidder whose proposal was next most acceptable and the Contractor shall execute contract and bond as herein provided. The bidder to whom the first award was made shall then forfeit the bid security submitted with his proposal.

The official form of contract will be executed in seven copies. Two executed copies of the official contract documents and specifications (project manual) will be returned to the Contractor after the contracts and bonds have been approved and executed by the Owner. In addition to the two executed copies of the project manual, the Contractor will be furnished without charge two "field copies" of the plans. Additional sets may be obtained from the engineer at the cost of reproduction.

These additional plans are to be stamped approved by the Owner before they can be used on the project.

4. LEGAL ADDRESSES

All notices, letters, and other communications to the Contractor will be mailed or delivered to either the contractor's business address listed in the Proposal or the contractor's office in the vicinity of the work, with delivery to either of these addresses being deemed as delivery to the Contractor. The addresses of the Owner appearing on page 2 are hereby designated as the place to which all notices, letters, and other communication to the Owner shall be mailed or delivered. Either party may change his address at any time by an instrument in writing delivered to the Owner and to the other party.

5. SCOPE AND INTENT OF CONTRACT DOCUMENTS

It is the intent of the construction documents to achieve a satisfactorily sound and quality finished product. The specifications and drawings are intended to supplement but not necessarily duplicate each other. Any work exhibited in the one and not the other shall be executed as if it had been set forth in both, so that the work will be constructed according to the complete design as determined by the Owner.

Should anything necessary for a clear understanding of the work be omitted from the specifications and/or drawings, or should the requirements appear to be in conflict, the Contractor shall secure written instructions from the Owner before proceeding with the work affected thereby. It is understood and agreed that the work shall be performed accordingly to the true intent of the contract documents.

Owner disclaims to Contractor any express or implied warranties that the specifications and/or drawings included in the Contract Documents are accurate and sufficient for purpose of completing the work according to the terms of this Agreement.

6. INDEPENDENT CONTRACTOR

The relationship of the Contractor to the Owner shall be that of an independent Contractor. Owner and Contractor agree that the negotiation, preparation and execution of the Contract Documents were negotiated, prepared, and executed as part of an arms-length transaction, and that no duty of good faith and fair dealing exists between Owner and Contractor, now, in the future, nor at any time in the past. The Owner shall not have the right to control the day to day activities of how the Contractor performs the work, being interested only in the results to be achieved.

7. ASSIGNMENT AND SUBCONTRACTING

The Contractor shall not assign or subcontract the work or any part thereof, without the previous written consent of the Owner, nor shall he assign, by power of attorney or otherwise, any of the money payable under this contract unless written consent of the Owner has been obtained. No right under this contract, nor claim for any money due or to become due hereunder shall be asserted against the Owner, or person acting for the Owner, by reason of any so called assignment of this contract or any part thereof, unless such assignment has been authorized by the written consent of the Owner. In case the Contractor is permitted to assign moneys due or to become due under this contract, the instrument of assignment shall contain a clause subordinating the claim of the assignee to all prior liens for services rendered or materials supplied for the performance of the work.

Should any subcontractor fail to perform in a satisfactory manner the work undertaken by him, his subcontract shall be immediately terminated by the Contractor upon notice from the Owner. The Contractor shall be responsible for the acts and omissions of his subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him. Nothing contained in this contract shall create any contractual relationship between any subcontractor and the Owner.

It is the intent of these specifications that the Contractor shall perform the majority of the work with his own forces and under the management of his own organization. Only subcontractors who have been listed in the proposal and who are accepted by the Owner as provided in the General Conditions may subcontract specific portions of the work. All subcontractors shall be directly responsible to the Contractor and shall be under his general supervision. All work performed under subcontracts shall be subject to the same contract provisions as the work performed by the contractor's own forces.

This Contract is considered personal between the Contractor and Owner therefore, any sale of more than 50% ownership of Contractor shall be considered as an assignment.

8. ORAL STATEMENTS

It is understood and agreed that the written terms and provisions of this agreement shall supersede all oral statements of representatives of the Owner, and oral statements shall not be effective or be construed as being a part of the contract.

9. REFERENCE STANDARDS AND LAWS AND REGULATIONS

Reference to the standards of any technical society, organization, or association, or to codes of local or state authorities, shall mean the latest standard, code, specification, or tentative standard adopted and published at the date of taking bids, unless specifically stated otherwise.

The Contractor shall keep itself fully informed of, and shall observe and comply with, all laws, ordinances, and regulations which, in any manner, affect those engaged or employed on any work, or the materials and equipment used in any work or in any way affect the performance of any work, and of all orders and decrees of bodies or tribunals having jurisdiction or authority over work performed under the contract. If any discrepancy or inconsistency should be discovered between the contract and any such law, ordinance, regulation, order or decree, the Contractor shall immediately report the same in writing to the Owner. The Contractor shall be responsible for the compliance with the above provisions by subcontractors of all tiers.

Except as otherwise specified, the Contractor shall procure and pay for all permits and inspections and shall furnish any bonds, security or deposits required to permit performance of its work hereunder.

(a) OSHA: all work and job site conditions shall, at all times, adhere to the requirements of the latest provisions of the Occupational Safety and Health Act.

(b) REQUIREMENTS AND CODES: Wherever references are made in the contract to requirements or codes in accordance with which work is to be performed or tested, the addition or revision of the requirements or codes current on the date of this contract shall apply, unless otherwise expressly set forth. Unless otherwise specified, reference to such requirements or codes is solely for technical information.

This contract shall be governed by the laws of the State of Texas and by such federal laws as may be applicable.

The parties agree that all claims, disputes, and other matters in question between the Contractor and the Owner arising out of or pertaining to the contract documents or the breach thereof, shall, except as otherwise expressly provided, be decided solely in the Courts of the State of Texas, in the County of Dallas.

Interest, if any, allowable on the claims of either party shall be at the current rate for judgments in the Courts of the State of Texas.

10. CONTRACTOR TO CHECK DRAWINGS AND SCHEDULES

The Contractor shall check all dimensions, elevations, and quantities indicated on the drawings and schedules furnished to him by the Owner. The Contractor shall notify the Owner of any discrepancy between the drawings and the conditions at the site, or any error or omission in drawings, or in the layout as given by stakes points, or instructions, which he may discover in the course of work. The Contractor will not be allowed to take advantage of any error or omission in the drawings or contract documents. Full instructions will be furnished by the Owner should such error or omission be discovered, and the Contractor shall carry out such instructions as if originally specified.

11. FIGURED DIMENSIONS TO GOVERN

Dimensions and elevations indicated on the drawings shall be accurately followed even though different from scaled measurements. No work indicated on the drawings, the dimensions of which are not indicated, shall be executed until necessary dimensions have been obtained from the Owner.

12. NO WAIVER OF RIGHTS

Neither the inspection by the Owner or any of their officials, employees, or agents, nor any order by the Owner for payment of money, or any payment for, or acceptance of, the whole or any part of the work by the Owner, nor any extension of time, nor any possession taken by the Owner or its employees, nor any action of the Owner shall operate as a waiver of any provision of this contract, or of any power herein reserved to the Owner, or of any right to damages herein, provided nor shall any waiver of any breach in this contract be held to be a waiver of any other or subsequent breach.

13. CONTRACTOR'S SUPERINTENDENT AND EMPLOYEES

The Contractor represents that it is fully experienced and properly qualified to perform the class of work provided for herein, and that it is properly licensed, equipped, organized, and financed to perform such work.

The Contractor shall act as an independent contractor maintaining complete control over its employees and all of its subcontractors. The Contractor shall perform all work in an orderly and workmanlike manner, enforce strict discipline and order among its employees and assure strict discipline and order by its subcontractors.

Before starting work, the Contractor shall designate a competent, authorized representative to represent and act with full authority for the contract and shall inform the Owner in writing of the name, address, telephone number (day and night) of such representative, and of any change in such designation. This representative shall have authority to make binding and enforceable decisions in the name of the Contractor and to accept service of all notices which the Owner desires to serve or which are required by this contract to be served on the Contractor. As an alternate, such written notices may be mailed directly to the address of that party shown on the face of the Contract Agreement form. Such representative shall be present or be duly represented at the site of work at all times when work is actually in progress and, during period when work is suspended, arrangements acceptable to the Owner shall be made for any emergency work which may be required. The Contractor's authorized representative shall be supported by competent assistants, as necessary, and the authorized representative and its assistants shall be satisfactory to the Owner. All requirements, instructions, and other communications given to the Contractor's authorized representative by the Owner shall be as binding as if given to the Contractor.

The Contractor shall employ only fully experienced and properly qualified persons to perform any work. The Contractor shall be responsible for maintaining satisfactory conduct of its employees. The Contractor's site representative shall stay on the project until final completion of the work in accordance with the contract documents.

14. ENGINEERING INSPECTION

The Owner may appoint such inspectors, as the Owner deems proper to inspect the materials furnished and the work performed for compliance with the drawings and specifications. The Contractor shall furnish all reasonable assistance required by the Owner, or inspectors, for the proper inspection of the work. Should the Contractor object to any interpretation of the contract by any inspector, the Contractor may make written appeal to the Owner for a decision, but the Owner's decision shall be final.

Inspectors shall have the authority to reject work, which is unsatisfactory, faulty, or defective or does not conform to the requirements of the drawings and specifications. Inspection shall not relieve the Contractor from any obligation to construct the work strictly in accordance with the drawings and specifications. Work not so constructed shall be removed and replaced by the Contractor at his own expense.

15. RIGHT OF OWNER TO TERMINATE CONTRACT

If the work to be done under this contract is abandoned by the Contractor; or if this contract is assigned by him without the written consent of the Owner; or if the Contractor is adjudged bankrupt, or files for voluntary bankruptcy; or if a general assignment of his assets is made for the benefit of his creditors; or if a receiver is appointed for the Contractor of any of his property or if at any time in writing to the Owner determines that the performance of the work under this contract is being unnecessarily delayed, that the Contractor is violating any of the conditions of this contract, or that he is executing the same in bad faith or otherwise not in accordance with the terms of said contract; or if the work is not substantially completed within the time named for its completion or within the time to which such completion date may be extended; then the Owner may serve written notice upon the Contractor and his surety of the Owner's intention to terminate this contract. Unless within five (5) days after the serving of such notice, a satisfactory arrangement is made for continuance, this contract shall terminate. In the event of such termination, the surety shall have the right to take over and complete the work, provided that if the surety does not commence performance within 30 days, the Owner may take over and prosecute the work to completion, by contract or otherwise. The Contractor and his surety shall be liable to the Owner for all excess cost sustained by the Owner by reason of such prosecution and completion. The Owner may take possession of, and utilize in completing the work, all materials, equipment, tools, and plant on the site of the work, including such materials, etc., as may have been placed on the site by or at the direction of the Contractor.

The Owner may, at its option, terminate the performance of the work in accordance with this section, in whole, or from time to time in part, at any time by written notice thereof the Contractor, whether or not the Contractor is in default. Upon any such termination, Contractor shall waive any claims for damages, including loss of anticipated profits, on account thereof, but as the sole right and remedy of the Contractor, the Owner shall pay Contractor in accordance with subparagraph (b) below, provided, however, that those provisions of the contract documents which by their very nature survive final acceptance under the contract documents shall remain in full force and effect after such termination.

(a) Upon receipt of any such notice, the Contractor shall, unless the notice requires otherwise:

(1) Immediately discontinue work on the date and to the extent specified in the notice;

(2) Place no further order or subcontracts for materials, services, or facilities, other than as may be necessary or required for completion of work under the contract that is not terminated;

(3) Promptly make every reasonable effort to obtain cancellation upon terms satisfactory to the Owner of all order and subcontracts to the extent they relate to the performance of work terminated, or assign to the Owner those orders and subcontracts, and revoke agreements specified in such notice; and

(4) Assist the Owner, as specifically requested in writing, in the maintenance, protection and disposition of property acquired by the Owner under the contract.

(b) Upon any such termination, the Owner will pay the Contractor an amount determined in accordance with the following (without duplication of any item):

(1) All amounts due and not previously paid to the Contractor for work completed in accordance with the contract prior to such notice, and for work thereafter completed as specified in such notice;

(2) The cost of settling and paying claims arising out of the termination of work under subcontracts or orders as provided in subparagraph (a) (3) above;

(3) The reasonable cost incurred pursuant to subparagraph (a) (4) above; (4) Any

other reasonable costs incidental to such termination of work.

The foregoing amounts will include a reasonable sum, under all of the circumstances, as profit for all work satisfactorily performed by the Contractor.

15.1 TERMINATION FOR CONVENIENCE

Owner hereby reserves the right to terminate this Agreement without regard to fault or breach upon written notice to Contractor, effective immediately unless otherwise provided in said notice to Contractor, effective immediately unless otherwise provided in said notice. In the event of such termination, Owner shall pay as the sole amount due to Contractor in connection with the work (i) all sums due for Work performed to date including allowing profit and overhead (except retainage sums shall not be paid prior to thirty (30) days following the date of termination); and (ii) reasonable cost of termination. Such sums will be due and payable on the same conditions as set forth in this Agreement for final payment to the extent applicable. Upon receipt of such payment, the parties hereto shall have no further obligations to each other except for Contractor's obligations to perform corrective and/or warranty work and to indemnify Owner as provided for in this Agreement. It is understood and agreed that no profit, fee or other compensation shall be due or payable for unperformed work ontractor agrees that each subcontract and purchase order issued by it will reserve for Contractor the same right of termination provided by this Section
15.1 and Contractor further agrees to require that comparable provisions be included in all lower tier subcontracts and purchase orders.

Upon a determination by any court or body that termination of Contractor, or its successor in interest, was wrongful, such termination will be deemed converted to a termination for convenience and Contractor's remedy for wrongful termination is limited to the recovery of the payments permitted for termination for convenience as set forth above.

The rights and remedies of Owner and Contractor under this Agreement shall be non- exclusive, and shall be in addition to all the other remedies available to such parties at law or in equity, subject, however, in the case of Contractor, to the limitation contained above and other pertinent provisions of this Agreement.

16. EQUAL OPPORTUNITY

The Contractor is aware of, and is fully informed of, the Contractor's obligations under Executive Order 11246, and, where applicable, shall comply with the requirements of such order and all orders, rules and regulations promulgated thereunder unless exempted therefrom.

Without limitation of the foregoing, the Contractor's attention is directed to 41 CFR Section 60-1.4, and the clause therein entitled "Equal Opportunity Clause" which, by this reference, is incorporated herein.

The Contractor is aware of, and is fully informed of, the Contractor's responsibilities under Executive Order No. 11701, "List of Job Openings for Veterans" and, where applicable, shall comply with the requirements of such order, and all orders, rules and regulations promulgated thereunder unless exempted therefrom.

Without limitation of the foregoing, the Contractor's attention is directed to 41 CFR 60-250 et seq. and the clause therein entitled "Affirmative Action Obligations of the Contractors and Subcontractors for Disabled Veterans and Veterans of the Vietnam Era" which, by this reference is incorporated herein.

The Contractor certifies those segregated facilities, including, but not limited to, washrooms, work areas, locker rooms, are not, and will not, be maintained or provided for the Contractor's employees. Where applicable, the Contractor shall obtain similar certification from any of its subcontractors, vendors, or suppliers performing work under this contract.

The Contractor is aware of, and is fully informed of, the Contractor's responsibilities under the Rehabilitation Act of 1973, and, where applicable, shall comply with the provisions of the Act, and the regulations promulgated thereunder unless exempted therefrom.

Without limitation of the foregoing, the Contractor's attention is directed to 41 CFR Section 60-741 and the clause entitled "Affirmative Action Obligations of the Contractors and Subcontractors for Handicapped Workers" which, by this reference, is incorporated herein. Contractor must also comply with the rules and regulations as established by the Americans with Disabilities Act of 1990.

17. BEGINNING, PROGRESS, AND COMPLETION OF THE WORK; LIQUIDATED DAMAGES

The time of completion is of the essence of this contract. Unless otherwise specified in these contract documents or advised by written order of the Owner, the Contractor shall begin work within 10 days after the date of contract. The work shall be prosecuted to completion in accordance with the schedule provided for below and shall be 100% completed within time period stated in the Proposal.

The Owner and Contractor, recognizing that calculation of damages caused by Contractor's failure to complete within the contract time are difficult to assess, hereby agree that liquidated damages shall be assessed Contractor at the rate of $250.00 per calendar day for each day Contractor is late in completing past completion date.

It is understood that the foregoing constitutes an agreement as to minimum amount of damages only for failure to complete the work within the specified time. Should the Owner suffer damages over and above the amount specified above for any failure or negligence on the Contractor's part, other than failure to complete the work within the specified time, the Owner may recover such additional amount.

A detailed construction schedule and monthly payment schedule shall be prepared by the Contractor and submitted to the Owner for review within ten (10) days of the effective beginning date of the Contract, or prior to the commencement of construction, whichever occurs first. The schedule shall contain the various activities required to perform the work and the dates the activities will be started and completed in order to complete the work in accordance with the specified schedule requirements. The Contractor is responsible for determining the sequence and time estimates of the detailed construction activities. However, the Owner reserves the right to require the Contractor to modify any portion of the schedule the Owner determines to be impractical or unreasonable; as required to coordinate the Contractor's activities with those of other Contractors, if any, engaged in work for the Owner on the site; to avoid undue interference with the Owner's operations; and to assure completion of the work by the date or dates stipulated. Upon acceptance by the Owner of the Contractor's detailed construction schedule, the Contractor will be responsible for maintaining such schedule.

If at any time the Contractor's work is behind schedule, he shall immediately put into effect definite procedures for getting the work back on schedule. The procedures shall be subject to review and modification by the Owner. The Contractor will not be allowed extra compensation for costs (whether for costs for materials used and/or labor to be paid) incurred by him because of Contractor's accelerated operations required to maintain the schedule.

17.1 EXTENSION OF TIME FOR DELAY

In the event the progress of the work is delayed or interrupted by occurrences or events which entitle Contractor to an extension of time pursuant to the terms of this Agreement, then the work completion date shall be extended for a period equal to the length of such delay if within seven (7) days after the commencement of any such delay, contractor delivers to Owner a written notice of such delay stating the nature thereof and within seven (7) days following the expiration of any such delay provides a written request for extension of the work completion date by reason of such delay and such request is approved by Owner, which approval shall not be unreasonably withheld. Failure to deliver any such notice or request within the required period shall constitute an irrevocable waiver of any extension of the previously scheduled work completion date by reason of the cause in respect of which such notice and request were required to make only one such request with respect thereto. No extension of the previously scheduled work completion date (or right on the part of Contractor to secure any such extension) pursuant to this Section shall prejudice any right Owner may have under this Agreement, or otherwise, to terminate this Agreement.

Extension of time shall be Contractor's sole remedy for any such delay (except for Contractor's right to terminate this Agreement pursuant to the terms and provisions hereinafter set forth), unless the same shall have been caused by acts constituting intentional interference by Owner with Contractor's performance of the work and where to the extent that such acts continue after Contractor's notice to Owner of such interference. Owner's exercise of any of its rights to order changes in the work pursuant to this contract,

regardless of the extent of number of such changes, or Owner's exercise of any of its remedies of suspension of the work, or requirement or correction or re-execution of any defective work, shall not under any circumstances be construed as intentional interference with Contractor's performance of the work.

18. HINDRANCES AND DELAYS

The Contractor expressly agrees that the period of time named in the Proposal to complete all work includes allowance for all hindrances and delays incident to the work. The Contractor further agrees that no claims shall be made for hindrances and delays from any cause during the performance of the work, except as specifically provided for in the articles SUSPENSION OF WORK and EXTENSIONS OF TIME in these General Conditions.

18.1 RESEQUENCING OR ACCELERATION

In the event Contractor shall fall behind schedule at any time, for any reason, Owner shall be entitled to direct acceleration or resequencing of the work to bring the work back on schedule. In the event Contractor determines that the previously scheduled work completion date cannot be met by resequencing the work, then Contractor shall immediately provide to Owner, and in any event within seven (7) days after the date of receipt of any request by Owner for resequencing or acceleration, a plan to complete the work in the shortest possible time. No approval by the Owner of any plan for resequencing or acceleration of the work submitted by Contractor pursuant to this paragraph shall constitute a waiver by Owner of any damages or losses which Owner may suffer by reason of such resequencing or the failure of Contractor to meet the declared new scheduled completion date.

Owner shall additionally be entitled to direct the acceleration or resequencing of the work in order to achieve completion prior to the declared new scheduled completion date and Contractor shall be reimbursed by Owner for the amount of labor overtime actually incurred in respect thereto and shall be entitled to an increase adjustment the contract price to the extent of the labor portion of overtime so incurred.

19. SUSPENSION OF WORK

The Owner reserves the right to suspend and reinstate execution of the whole or any part of the work without invalidating the provisions of the contract. Orders for suspension or reinstatement of work will be issued by the Owner to the Contractor in writing. The time for completion of the work will be extended for a period equal to the time lost by reason of the suspension.

The Owner will pay extra costs and expenses, which are caused by work suspensions ordered by the Owner, to the Contractor.

20. EXTENSIONS OF TIME

Should the Contractor be delayed in the final completion of the work by any act or neglect of the Owner, or of any employee of either, or by any other Contractor employed by the Owner, or by strike, fire, regulatory agencies or other cause outside of the control of the Contractor and which, in the opinion of the Owner, could have been neither anticipated

nor avoided, then an extension of time sufficient to compensate for the delay, as determined by the Owner, will be granted by the Owner; provided that the Contractor gives the Owner notice in writing within 10 days of the cause of delay in each case and demonstrates that he has used all reasonable means to minimize the delay.

Extensions of time will not be granted for delays caused by unfavorable weather, unsuitable ground conditions, inadequate construction force, or the failure of the Contractor to place orders for equipment or materials sufficiently in advance to insure delivery when needed.

Failure of Owner furnished equipment and materials to arrive as scheduled, or failure of other construction Contractors to meet their schedule, shall not be justification for an extension of time, except where such failure causes, in the opinion of the Owner, an actual delay in the Contractor's work.

21. EXTRA OR CHANGE ORDER WORK

If a modification increases the amount of the work, and the added work or any part thereof is a type and character which can properly and fairly be classified under one or more unit price items of the Proposal listed in the Scope of Work section of this contract, then the added work or part thereof shall be paid for according to the amount actually done and at the applicable unit price. Otherwise, such work shall be paid for as hereinafter provided.

Claims for extra work will not be paid unless the work covered by such claims was authorized in writing by the Owner. The Contractor shall not have the right to prosecute or maintain an action in court to recover for extra work unless the claim is based upon a written order from the Owner. Payments for extra work will be based on agreed lump sums or on agreed unit prices as listed in the Scope of Work section of the contract whenever the Owner and the Contractor agree upon such prices before the extra work is started; otherwise, payments for extra work will be based on actual field cost plus the specified percentage allowance.

For the purpose of determining whether proposed extra work will be authorized, or for determining the payment method for extra work, the Contractor shall submit to the Owner, upon request, detailed cost estimate for proposed extra work. The Change Order Request shall indicate itemized quantities and charges for all elements of direct cost. Charges for the Contractor's subcontractor's extra profit, extra general superintendence, extra field office expense, and extra overheads shall be indicated as a percentage addition to the total estimated net cost. Unless otherwise agreed upon by the Contractor and the Owner, such percentage additions shall be 15 percent for the extra work performed by the Contractor's own forces or 20 percent for extra work performed by a subcontractor.

Further, the Change Order Request shall also include a suitable breakdown by trades and work classifications, Contractor’s estimate of the changes in the cost of the work attributable to the changes set forth in such Change Order Request, a proposed adjustment to the scheduled completion date resulting from such Change Order Request, and any proposed adjustments of time and costs related to unchanged work resulting from such Change Order Request. If Owner approves in writing such estimate by Contractor, such Change Order Request and such estimate shall constitute a Change Order, and the cost of the contract price and previously scheduled work completion date shall be adjusted as set forth in such estimate. Change Orders shall not cause any modification to Contractor’s fee except as specifically set forth herein, it being understood and agreed that Contractor will receive no fee based on the increased cost of the work resulting from Change Orders unless the new work requested is beyond the scope of the work, and then only to the extent thereof pursuant to the terms of this contract. Contractor shall include in each subcontract a limitation on the amount

of profit and overhead, which subcontractors can include in Change Orders, which limitation will be subject to the approval of Owner. Agreement on any Change Order shall constitute a final settlement on all items covered therein, subject to performance thereof and payment therefore pursuant to the terms of this Agreement.

When payment for extra work is based on actual field cost, the Contractor will be paid the actual field cost plus an allowance of 15 percent if the extra work is performed by the Contractor's own forces or 20 percent if the extra work is performed by a subcontractor. The allowance will be paid as full compensation for the Contractor's and subcontractors extra profit, extra general superintendence, extra field office expense, extra overheads, and all other elements of extra cost not defined herein as actual field cost.

The actual field cost shall include only those extra costs for labor and materials expended in direct performance of the extra work. The form in which actual field cost records are kept, the construction methods, and the type and quantity of equipment used shall be acceptable to the Owner.

Construction equipment which the Contractor has on the job site and which is of a type and size suitable for use in performing the extra work shall be used. The hourly rental charges for equipment shall not exceed one-half of one percent of the latest applicable Associated Equipment Distributors published monthly rental rates and shall apply to only the actual time the equipment is used in performing the extra work.

When extra work requires the use of equipment, which the Contractor does not have on the job site, the Contractor shall obtain the concurrence of the Owner before renting or otherwise acquiring additional equipment. The rental charges for the additional equipment shall not exceed the latest applicable Associated Equipment Distributors published rental rates.

21.1 DECREASED WORK

If a modification decreases the amount of work to be done, such decrease shall not constitute the basis for a claim for damages or anticipated profits on work affected by such decrease. Where the value of omitted work is not covered by applicable unit prices, the Owner shall determine on an equitable basis the amount of (a) credit due the Owner for contract work not done as a result of an authorized change, (b) allowance to the Contractor for any actual loss incurred in connection with the purchase, delivery, and subsequent disposal of materials or equipment required for use on the work as planned and which could not be used in any part of the work as actually built, and (c) any other adjustment of the contract amount where the method to be used in making such adjustment is not clearly defined in the contract documents.

Unless otherwise agreed upon by the Owner and the Contractor, the credit due the Owner for reductions in the amount of work to be done shall be the estimated field cost of the deleted work plus an overhead allowance of:

Ten percent of the estimated field cost if the work was to have been done by the Contractor's own forces, or;

Fifteen percent of the estimated field cost if the work was to be done by a subcontractor.

Field cost referred to above shall include the category of costs listed as actual field costs, items (a) to (f) inclusive of the article entitled EXTRA WORK.

22. PROTECTION OF WORK AND PROPERTY

The Contractor shall be responsible for and shall bear any and all risk of loss of, or damage to work in progress, all materials delivered to the site, and all materials, tools, and equipment until completion and final acceptance of the work to be performed under this contract.

The Contractor shall promptly take all precautions which are necessary and adequate against any conditions created during the progress of the Contractor's activities hereunder which involve a risk of bodily harm to persons or a risk of damage to any property. Contractor shall continuously inspect all work, materials and equipment to discover and determine, and shall be solely responsible for discovery, determination and correction of any conditions which involve a risk of bodily harm to persons or damage to property.

The Contractor shall comply with all applicable safety laws, standards, codes and regulations in the jurisdiction where the work is being performed specifically but without limiting the generality of the foregoing and regardless of any exemptions provided by law, with all rules, regulations and standards adopted pursuant to the Occupational Safety and Health Act of 1970.

The Contractor will preserve and protect all existing vegetation such as trees, shrubs, and grass on or adjacent to the site of work which is not to be removed and which does not unreasonably interface with the construction work. Care will be taken in removing trees authorized for removal to avoid damage to vegetation to remain in place. The Contractor will protect from damage all existing improvements, utilities, roads, and bridges at or near the site of work and will repair or restore any damage to such facilities resulting from failure to comply with the requirements of this contract of the failure to exercise reasonable care in the performance of the work. Under no circumstances will county or township roads and bridges be subject to greater than normal highway truck loadings.

The Contractor shall provide and maintain such temporary work as is required for the protection of the public and those employed in or about the work site, including all signs, guards, barricades, night lights and any other temporary protection as may be necessary. Contractor shall provide and maintain such temporary work as is required for protection of finished work, including building paper, boxing, planking, protective coating, and such other protection as may be deemed necessary by the Owner. All such work shall be returned to original condition by the Contractor on completion of the contract.

Whenever necessary to maintain proper temperatures for performance of work, or to protect or to close in work in place, Contractor shall provide and maintain temporary enclosures as directed by the Owner for all openings or exterior surfaces that are not enclosed with finishing materials.

The Contractor shall protect all the work including buildings, structures, equipment, excavations, trenches, etc. from water damage including damage by rainwater, ground water, backing-up of drains, downspouts of sewers and shall construct and maintain all necessary drainage and do all pumping required to protect or to perform the work. Contractor shall provide protection to any equipment in place, as required to prevent damage by moisture. Contractor, in general, shall at all times carefully protect the work, materials, and equipment against damage from the weather, and comply with the directions of the Owner in order to avoid any adverse effect on the project from weather conditions.

The Contractor assumes all liability for its failure to comply with the provisions of this Article. The Contractor shall include this Article in its entirety in all subcontracts for any work at the project site.

Upon the failure of the Contractor or its subcontractors to comply with any of the requirements of the Article, the Owner shall have the authority to stop any operations of the Contractor or its subcontractors affected by such failure until such failure is remedied. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for increased costs or damages by the Contractor or its subcontractors.

23. SAFETY

The Contractor shall at all times conduct all operations under the Contractor in a manner to avoid the risk of bodily harm to persons or risk of damage to any property. The Contractor shall promptly take all precautions, which are necessary and adequate against any conditions, which involve a risk of bodily harm to persons or a risk of damage to any property. The Contractor shall continuously inspect all work, materials and equipment to discover and determine any such conditions and shall be solely responsible for discovery, determination and correction of any such conditions. The Contractor shall designate an employee as safety supervisor who is acceptable to the Owner.

The Contractor shall comply with all applicable laws, regulations and standards. The Contractor shall coordinate with other Contractors and subcontractors on safety matters and shall promptly comply with any specific safety directions given to the Contractor by the Owner.

The Contractor shall erect and maintain, as required by existing conditions and progress of the work, all reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazard, promulgating safety regulations and notifying the Owner and users of adjacent properties and utilities.

The Contractor shall maintain a Safety Program with detail commensurate with the work to be performed. Such review shall not relieve the Contractor of its responsibility for safety, nor shall it be construed as limiting in any manner the Contractor's obligation to undertake any action which may be necessary or required to establish and maintain safe working conditions at the site.

The Contractor shall maintain accurate accident and injury reports.

The Contractor shall hold regular scheduled meetings to instruct its personnel on safety practices. The Contractor shall furnish safety equipment and enforce the use of such equipment by its employees.

All equipment furnished and installed on this project shall be manufactured and installed in accordance with the applicable parts of the Williams-Steiger Occupational Safety and Health Act of 1970, and its subsequent amendments and revisions. All work shall be performed in accordance with the regulations and requirements of the above noted Act, revisions and amendments.

EXCAVATION SAFETY PROCEDURE

In a municipality or in the extraterritorial jurisdiction of a municipality as provided by the Municipal Annexation (Chapter 43) Texas Local Government Code, on construction projects in which excavation will exceed a depth of five feet, the bid document and the contract must include detailed plans and specifications for excavation safety systems.

Prior to execution of a contract the Contractor will be required to submit an excavation safety plan for the project. This excavation safety plan must be designed and sealed by a professional engineer registered in the State of Texas with professional experience in soil mechanics. The Contractor is responsible for obtaining borings and soil analysis as required for plan design. The excavation safety plan shall be designed in conformance with Occupational Safety and Health Administration (OSHA) Standards and Regulations.

After review of the excavation safety plan, the City Engineer will forward the reviewed plan to the appropriate city construction division for use in inspection. Plans for construction will not be released by the City Engineer until this plan is reviewed. Changes in the excavation safety plan after initiation of construction may not be cause for extension of time or change order, and will require the same review process. Contractor accepts sole responsibility for compliance with all applicable safety requirements. The review is only for general conformance with OSHA Safety Standards. Release of the excavation safety plan by the City Engineer does not relieve Contractor from any property damage or bodily injury (including death) that arises from use of the excavation safety plan, from Contractor's negligence in performance of contract work, or from city's failure to note exceptions to the excavation plan. The safety plan shall remain the sole responsibility and liability of the Contractor. A separate pay item for an excavation and support system shall be included in the bid documents.

Contractors have three ways to meet OSHA standards for excavation safety. They are as follows:

1. Minimum angle of repose for sloping of the sides of excavations.
2. Utilization of trench box.
3. Shoring, sheeting and bracing methods.

Contractors electing to utilize the minimum angle of repose must submit:

1. Soil classification according to the unified soil classification system including water content and plasticity indexes, and a minimum angle of slope excavation.
2. A detailed plan of the excavation area and the impact on existing right-of-way and infrastructure.

3. Waiver of claim for delay of cost.

Contractors electing to utilize a trench box must submit:

1. Physical dimensions, materials, position in the trench, expected loads, and the strength of the box.
2. Waiver of claim for delay cost.

Contractors electing to utilize shoring, sheeting and bracing must submit:

1. Dimensions and materials of all uprights, stringers, cross-bracing and spacing required to meet OSHA requirements.
2. Waiver of claim for delay cost.

24. TAXES, PERMITS AND LICENSES

The Contractor shall obtain and pay for all licenses, permits, and inspections required for the work.

The Contractor shall pay all appropriate sales taxes, excluding materials permanently retained by the City of Carrollton franchise taxes, income taxes, gross receipts taxes, and other business or occupation taxes imposed upon the Contractor.

25. PATENTS

Royalties and fees for patents covering materials, articles, apparatus, devices, equipment, or processes used in the work, shall be included in the contract amount. The Contractor shall satisfy all demands that may be made at any time for such royalties or fees and he shall be liable for any damages or claims for patent infringements. The Contractor shall, at his own cost and expense, defend all suits or proceedings that may be instituted against the Owner for alleged infringement of any patents involved in the work and, in case of an award of damages, the Contractor shall pay such award. Final payment to the Contractor by the Owner will not be made while any such suit or claim remains unsettled.

In the event the Contractor is found to have infringed a patent, the Contractor shall either replace the part or process with a non-infringing part or process approved by the Owner, or secure the right to use the infringing part or process. Either choice shall be at the Contractor's expense.

26. MATERIALS AND EQUIPMENT

Unless specifically provided otherwise in each case, all materials and equipment furnished for permanent installation in the work shall conform to applicable standard specifications and shall be new, unused, and undamaged when installed or otherwise incorporated in the work. No such material or equipment shall be used by the Contractor for any purpose other than that intended or specified, unless such use is specifically authorized by the Owner in each case.

All required tests in connection with acceptance of source of materials shall be made at the Contractor's expense by a properly equipped laboratory of established reputation whose work and testing facilities are acceptable to the Owner. Any change in origin or method of reparation or manufacture of a material be routinely tested will require new tests. Reports of all tests shall be furnished to the Owner in as many copies as required.

27. GUARANTEE

Contractor shall guarantee that all products are in accordance with the manufacturer's guarantees, warranties, or Policies. Any replacement of defective material or materials will be made in accordance with such guarantee or warranty policies but, in any case, responsibility does not end with the replacement of the defective part or parts, and no responsibility will be assumed by the Owner for unauthorized repair or replacement of said equipment. Nor any expense will be incurred due to failure of said equipment excepting replacement of its defective part or parts by the manufacturer and in accordance with said manufacturer's policies.

Contractor's warranty against defects in material and workmanship shall extend two years from the date of final payment.

28. INSURANCE

The Contractor shall secure and maintain throughout the duration of this contract insurance of such types and in such amount as may be necessary to protect himself and the interest of the Owner against all hazards or risks of loss as hereinafter specified. The form and limits of such insurance, together with the underwriter thereof in each case, shall be acceptable to the Owner but regardless of such acceptance it shall be the responsibility of the Contractor to maintain adequate insurance coverage at all times. Failure of the Contractor to maintain adequate coverage shall not relieve him of any contractual responsibility or obligation.

Satisfactory certificates of insurance shall be filed with the Owner prior to starting any construction work on this contract. The certificates shall state that 30 days advance written notice will be given to the Owner before any policy covered thereby is changed or canceled. No deductibles shall be shown on the certificate.

The Contractor shall comply with all Federal, State and local laws and ordinances relating to Social Security, Unemployment Insurance, Pensions, etc.

28.1 WORKERS COMPENSATION INSURANCE COVERAGE

(A) Definitions:

Certificate of coverage ("certificate") - copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission, or a coverage agreement (TWCC-81, TWCC-82, TWCC-83, or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.

Duration of the project - includes the time from the beginning of the work on the project until the contractor's/person's work on the project has been completed and accepted by the governmental entity. **Persons providing services on the project ("subcontractor" in §406.096)** - includes all persons or entities performing all or part of the services the contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of

any entity which furnishes persons to provide services on the project. "Services" include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

(B) The contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all employees of the contractor providing services on the project, for the duration of the project.

(C) **The Contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.**

(D) If the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project, the contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.

(E) The contractor shall obtain from each person providing services on a project, and provide to the governmental entity:

(1) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and

(2) no later than seven days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.

(F) The contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.

(G) The contractor shall notify the governmental entity in writing by certified mail or personal delivery, within ten days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.

(H) The contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Workers' Compensation Commission, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.

(I) The contractor shall contractually require each person with whom it contracts to provide services on a project, to:

(1) provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, §401.011(44) for all of its employees providing services on the project, for the duration of the project;

(2) provide to the contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project;

(3) provide the contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of certificate of coverage ends during the

duration of the project;

(4) obtain from each other person with whom it contracts, and provide to the contractor:
   (a) a certificate of coverage, prior to the other person beginning work on the project; and
   (b) a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

(5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;

(6) notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and

(7) contractually require each person with whom it contracts, to perform as required by paragraphs (1) - (7), with the certificates of coverage to be provided to the person for whom they are providing services.

(J) By signing this contract or providing or causing to be provided a certificate of coverage, the Contractor is representing to the governmental entity that all employees of the Contractor who will provide services on the project will be covered by workers' compensation coverage for duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.

(K) The Contractor's failure to comply with any of these provisions is a breach of contract by the Contractor which entitles the governmental entity to declare the contract void if the Contractor does not remedy the breach within ten days after receipt of notice of breach from the governmental entity.

28.2 COMPREHENSIVE AUTOMOBILE LIABILITY

This insurance shall be written in comprehensive form and shall protect the Contractor against all claims for injuries to members of the public and damage to property of others arising from the use of motor vehicles licensed for highway use, whether they are owned, non-owned, or hired.

The liability limits shall not be less than:

Bodily injury $250,000/person
.....$500,000/occurrence

Property Damage ….$100,000/occurrence

The insurance shall be of the occurrence type and name the Owner as additional insured.

28.3 COMPREHENSIVE GENERAL LIABILITY

This insurance shall be written in comprehensive form and shall protect the Contractor against all claims arising from injuries to members of the public or damage to property of others arising out of any act of omission of the Contractor or his agents, employees, or subcontractors. In addition, this policy shall specifically insure the contractual liability assumed by the Contractor under the article entitled DEFENSE OF SUITS.

To the extent that the Contractor's work, or work under his direction, may require blasting, explosive conditions, or underground operations, the comprehensive general liability coverage shall contain no exclusion relative to blasting, explosion, collapse of buildings, or damage to underground property. The liability limits shall not be less than:

Bodily Injury $250,000/person
.....$500,000/occurrence

Property Damage ...$500,000/occurrence
...$500,000/aggregate

The insurance shall be of the occurrence type and name the Owner as additional insured.

28.4 BUILDER 'S RISK

This insurance shall be written in completed value form and shall protect the Contractor and the Owner against risks of damage to buildings, structures, and materials and equipment not otherwise covered under installation floater insurance, from the perils of fire and lightning, the perils included in the standard extended coverage endorsement, and the perils of vandalism and malicious mischief. The amount of such insurance shall not be less than the insurable value of the work at completion less the value of the materials and equipment insured under installation floater insurance.

Equipment installed under this contract shall be insured under installation floater insurance when the aggregate value of the equipment exceeds $10,000.00.

If the work does not include the construction of building structures, builder's risk insurance may be omitted providing the installation floater insurance fully covers all work.

Builder's risk insurance shall provide for losses to be payable to the Contractor and the Owner as their interests may appear and shall contain a waiver of subrogation rights against the insured parties.

28.5 INSTALLATION FLOATER

This insurance shall protect the Contractor and the Owner from all insurable risks of physical loss or damage to materials and equipment not otherwise covered under builder's risk insurance, while in warehouse or storage areas, during installation, during testing, and after the work is completed. Installation floater insurance shall be of the "all risks" type, with coverages designed for the circumstances which may occur in the particular work included in this contract. The coverage shall be for an amount not less than the insurable value of the work at completion, less the value of the materials and equipment insured

under builder's risk insurance. The value shall include the aggregate value of the Owner furnished equipment and materials to be erected or installed by the Contractor not otherwise insured under builder's risk insurance.

29. DEFENSE OF SUITS

In case any action in court is brought against the Owner, or any officer or agent of the Owner, for the failure, omission, or neglect of the Contractor to perform any of the covenants, acts, matters, or things by this contract undertaken; or for injury or damage caused by the alleged negligence of the Contractor or his subcontractors or his or their agents, or in connection with any claim based on lawful demands of subcontractors, workmen, materialmen, or suppliers the Contractor shall indemnify and save harmless the Owner and his officers and agents, from all losses, damages, costs, expenses, judgements, or decrees arising out of such action.

30. PATENT INDEMNITY

The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof, except that the Owner shall be responsible for all such loss when a particular design, process or the product of a particular manufacturer or manufacturers is specified. But, if the Contractor has reason to believe that the design, process, or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the Owner.

31. INDEMNITY AND RELEASE

The Contractor is solely responsible for and shall defend, indemnify, and hold Owner (or any of Owner's representatives or employees), free and harmless from and against any and all claims, liabilities, demands, losses, damages, costs or expense to all persons (including but not limited to reasonable attorneys' fees) arising out of resulting from or occurring in connection with the performance of the work that is (i) attributable to any bodily or personal injury, sickness, diseases or death of any person or any damage or injury to or destruction of real or personal property (other than the work itself) including the loss of use thereof, and (ii) caused in whole or in part by any negligent, strict liability or other act or omission of contractor, any subcontractor or supplier, their respective agents or employees or any other party for whom any of them may be liable regardless of whether such is caused in part by the negligent, strict liability or other act or omission of a party or parties indemnified hereunder.

Said indemnity and hold harmless agreement shall also apply to claims arising from accidents to contractor, its agents or employees, whether occasioned by contractor or its employees, the owner or his employees, or by any other person or persons.

The foregoing indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

32. FINAL PAYMENT AND RELEASE

Acceptance by the Contractor of last payment shall be a release to the Owner and every officer and agent thereof, from all claims and liability hereunder for anything done or furnished for, or relating to the work, or for any act or neglect of the Owner or of any person relating to or affecting the work.

33. INSPECTION

The Owner shall have the right, without extra charge therefore; to inspect all materials and equipment supplied under this contract at any time, including the place of manufacture, either during performance of the work, on final inspection, or during any applicable warranty period. The Owner or its designated representative shall have the right to reject equipment, materials and work not complying with the requirements of this contract. The Owner shall notify the Contractor in writing that such equipment, material or work is rejected. Thereupon, rejected work shall be satisfactorily corrected, rejected equipment shall be satisfactorily repaired or replaced with satisfactory equipment, and rejected material shall be satisfactorily replaced with satisfactory material, all in accordance with the contract, and the Contractor shall promptly segregate and remove rejected materials and equipment from the premises. All such correcting, repairing, replacing, and removing shall be by and at the expense of the Contractor.

The Owner will perform inspections in such a manner so as not to delay the work unreasonably, and the Contractor shall perform its work in such a manner as not to delay inspection unreasonably.

34. FINAL INSPECTION

When the work has been completed and at a time mutually agreeable to the Owner and Contractor, the Owner will make a final inspection of the work as to the acceptability and completeness of the work.

35. CLAIMS FOR LABOR AND MATERIALS

The Contractor shall pay all subcontractors and other persons furnishing labor or materials for the work from the contract amount. The Contractor is aware of, and is fully informed of the Contractor's responsibility under article 601f V.T.C.S. pertaining to payments for goods and services contracted for by State agencies or political subdivisions, applies to construction contracts. The Contractor shall be responsible for payment to vendors and subcontractors in accordance with Chapter 2251, Texas Government Code. No third party shall have any contractual privity with the Owner. The Contractor shall indemnify and save harmless the Owner from all claims for labor and materials furnished under this contract. When requested by the Owner, the Contractor shall submit satisfactory evidence that all persons, firms, or corporations who have done work or furnished materials under this contract, for which the Owner may become legally liable, have been fully paid or satisfactorily secured. In case such evidence is not furnished or is not satisfactory, an amount will be retained money due the Contractor which in addition to any other sums that may be retained will be sufficient, in the opinion of the Owner, to liquidate all such claims. Such sum will be retained until the claims as aforesaid are fully settled or satisfactorily secured.

Before final acceptance of the work by the Owner, the Contractor shall submit to the Owner in duplicate a notarized affidavit stating that all subcontractors, vendors, persons, or firms who have furnished labor or materials for the work have been fully paid and that all taxes have been paid. A statement from the surety shall also be submitted consenting to the making of the final payment.

36. ESTIMATES AND PAYMENTS

On or about the first day of each month the Contractor shall make an estimate of the value of the work completed. The Contractor and the Owner shall review the estimate prior to submitting the formal invoice to the Owner. The estimated cost of repairing, replacing, or rebuilding any part of the work or replacing materials which do not conform to the drawings and specifications will be deducted from the estimated value by the Owner.

The Contractor shall furnish to the Owner such detailed information as he may request to aid in the preparation of monthly estimates. After each estimate has been found acceptable, the Owner will pay to the Contractor on or about the 25th day of the month
90% of the estimated value less any previous payments. The Contractor shall be responsible for payment to vendors and subcontractors in accordance with article Chapter
2251, Texas Government
Code.

There will be no payments for materials stored on the site.

After official acceptance of the work, the Owner will prepare a final estimate of the work done under this contract. Preparation of the final estimate will not be made until the affidavit and statement required in the article entitles CLAIMS FOR LABOR AND MATERIALS have been received. The Owner will, within 30 days thereafter, pay the entire balance due after deducting all amounts to be retained under any provision of this contract.

36.1 PAYMENTS

Payments may be withheld by Owner for (1) defective work not remedied, (2) claims filed by third parties, (3) failure of the Contractor to make payments properly to subcontractors or for labor, materials or equipment, (4) reasonable evidence that the work cannot be completed for the unpaid balance of the contract price, (5) damage to the Owner or another contractor, (6) reasonable evidence that the work will not be completed by the scheduled work completion date and that the unpaid balance of the contract price would not be adequate to cover actual or liquidated damages for the anticipated delay, (7) persistent failure to carry out the work in accordance with the Contract Documents or (8) statutory retainage as described in Chapter 53 of the Texas Property Code.

37. LIENS

Neither the Contractor, nor any of his subcontractors, workers or suppliers shall have the right of lien against the work performed under this contract, or any property of the Owner to secure payment for labor and materials.

38. STATE LAW

This contract is performable in the State of Texas and shall be governed by the laws of the State of Texas. Venue on any suit hereunder shall be in Dallas County, Texas.

TECHNICAL SPECIFICATIONS

JOSEY RANCH SPORTS COMPLEX ADAPTIVE SPORTS FIELD

TECHNICAL SPECIFICATIONS

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GENERAL REQUIREMENTS

SITE WORK

CONCRETE

SECTION 01010 -- Summary of Work

1.01 WORK COVERED BY CONTRACT DOCUMENTS:

A. Work Includes: All construction, labor, materials, testing, and associated activities necessary for replacing the existing backstop fencing, dugout relocation, earthwork and storm drainage installation associated with the construction of a 125' radius adaptive sports field with Hellas Real Grass and Cushdrain synthetic field surface, site earthwork, turf establishment in disturbed areas, erosion control and associated construction items.

B. Contractor's Duties:
1. Except as specifically noted, provide and pay for:
   a. Labor, materials and equipment.
   b. Tools, construction equipment and machinery.
   c. Water, heat, and utilities required for construction.
   d. Water for installation, establishment and maintenance of turf.
   e. Other facilities and services necessary for proper execution and completion of work.
2. Owner is exempt from sales tax on products permanently incorporated into the project.
   a. **Tax Exemption:** The following applies to tax exemption status pursuant to Chapter 151 of Texas Tax code:
      Materials which are incorporated into or become part of the project are exempt from sales tax. A "separated contract" will be issued by the City of Carrollton which separates charges for material from charges for labor.
      The successful low bidder must provide separate bid amounts for the labor and materials aspect of the project and acquire a sales tax permit issued by the State Comptroller. The contractor is expected to execute a resale certificate instead of paying the sales tax at the time of purchase. The City of Carrollton will issue an exemption certificate for the materials as long as they are incorporated into the finished project. This procedure may not be used for materials which do not become a part of the finished product (example: equipment rentals, form materials, etc.).
      If contractor does not issue a resale certificate, then the amount of sales tax must be included in the prices quoted. No additional compensation, beyond the prices quoted, is due the contractor for sales tax.
   b. Obtain sales tax exemption certificate number from Owner.
   c. Place exemption certificate number on invoices for materials incorporated in work.
   d. Upon completion of work, file with the Owner a notarized statement that all purchases made under exemption certificate were entitled to be exempt.
   e. Pay legally assessed penalties for improper use of exemption certificate number.
3. Secure and pay for, as necessary for proper execution and completion of work, and as applicable at time of receipt of bids:
   a. Government Fees.
   b. Licenses.

4. The Contractor will not be required to pay for building permits issued by the City of Carrollton.
5. Give required notices.
6. Comply with codes, ordinances, rules, regulations, orders and other legal requirements of public authorities which bear on performance of work.
7. Promptly submit written notice to Architect of observed variance of Contract Documents from legal requirements. Assume responsibility for work known to be contrary to such requirements, without notice.

1.02 CONTRACTS:

Construct Work under a stipulated sum contract, including General Construction, Site Work, Mechanical Work and Electrical Work, and any other Required Work.

1.03 SPECIAL REQUIREMENTS:

Contractor shall assume responsibility for the protection of all areas of work and shall protect existing property and trees as required during the construction period. Existing surfaces that are damaged due to construction shall be patched or replaced to original condition.

1.04 CONTRACTOR USE OF PREMISES:

A. Confine operations at site to areas permitted by Law, Ordinances, Permits, and Contract Documents.
B. Do not unreasonably encumber site with materials or equipment.
C. Do not load structure/pavement with weight that will endanger.
D. Assume full responsibility for protection and safekeeping of products stored on premises.
E. Move any stored products which interfere with operations of Owner or other Contractors.
F. Obtain and pay for use of additional storage or work areas needed for operations.
G. Use of site: exclusive and complete, for execution of work, except:
    1. Areas where trees are located.
    2. Areas under construction by others.
    3. Areas beyond the 'Limits-of-Work'.
H. Limit use of site for work and storage as follows:
    1. For work related to this project only.

(End of Section)

SECTION 01045 -- Cutting and Patching

PART 1 - GENERAL

1.01 RELATED REQUIREMENTS SPECIFIED ELSEWHERE:

A. Cutting and Patching (General Conditions)------Article 4.14.

1.02 DESCRIPTION:

A. Execute cutting including excavating, fitting or patching of work required to:
   1. Make several parts fit properly.
   2. Uncover work to provide for installation of ill-timed work.
   3. Remove and replace defective work.
   4. Remove and replace work not conforming to requirements of Contract Documents.
   5. Remove samples of installed work as specified for testing.
   6. Install specified work in existing construction.
B. In addition to Contract requirements, upon written instructions of Architect:
   1. Uncover work to provide for Architect observation of covered work.
   2. Remove samples of installed materials for testing.
   3. Remove work to provide for alteration of existing work.
C. Do not endanger any in-place work by cutting or alteration to any part of it.
D. Do not cut or alter work of another separate Contractor without written consent of Architect/Engineer, General Contractor and of separate Contractor.

1.03 SUBMITTALS:

A. Prior to cutting which affects structural safety of project, submit written notice to Architect requesting consent to proceed with cutting, including:
   1. Identification of project, description of affected work, necessity for cutting, effect on other work, effect on structural integrity of project, description of proposed work. Designate:
      a. Scope of cutting and patching.
      b. Contractor and trades to execute work.
      c. Products proposed to be used.
      d. Extent of refinishing.
   2. Alternative to cutting and patching.
   3. Designation of party responsible for cost of cutting and patching.
B. Prior to cutting and patching done on instruction of Architect, submit cost estimate.
C. Should conditions of work or schedule indicate change of materials or methods, submit written recommendation to Architect, including:
   1. Conditions indicating change.
   2. Recommendations for alternative materials or methods.
   3. Submittals as required for substitutions.
C. Submit written notice to Architect designating time work will be uncovered to provide for observation.

1.04 PAYMENT FOR COSTS:

A. Costs caused by ill-timed or defective work, or work not conforming to Contract Documents, including costs for additional services of Architect: Party responsible for ill-timed, defective or nonconforming work.

B. Costs to correct damage to existing structures, pavement or any previously finished work that is not ill-timed, defective or nonconforming: Party responsible for damage.
C. Costs to correct damage to existing structures, pavement, or any previously finished work that is not ill-timed, defective or nonconforming when damage is caused by construction methods or procedures adopted by a Contractor or Subcontractor strictly to expedite the completion of his work only: Party responsible for damage.

PART 2 - PRODUCTS

2.01 MATERIALS:

For replacement of work removed, comply with Specifications for type of work to be performed.

PART 3 - EXECUTION

3.01 INSPECTION:

A. Inspect existing conditions of work, including elements subject to movement or damage during cutting and patching and during excavating and backfilling.
B. After uncovering work, inspect conditions affecting installation of new products.

3.02 PREPARATION PRIOR TO CUTTING:

A. Provide shoring, bracing and support as required to maintain structural integrity of project.
B. Provide protection for other portions of Project.
C. Provide protection from the elements.

3.03 PERFORMANCE: Ill-timed or nonconforming work.

A. Execute fitting and adjustment of products to provide finished installation to comply with specified tolerances, finishes.
B. Execute cutting and demolition by methods which will prevent damage to other work and will provide proper surfaces to receive installation of repairs and new work.
C. Execute excavating and backfilling by methods which will prevent damage to other work and will prevent settlement.
D. Restore work which has been cut or removed; install new products to provide completed work in accord with requirements of Contract Documents.
E. Refinish entire surfaces as necessary to provide an even finish:
    1. Continuous surfaces: to nearest intersections.
    2. Assembly: entire refinishing.
F. No cutouts, access doors or mechanical or electrical devices of any kind shall be installed in finish materials or areas other than within mechanical rooms and shafts without specific prior approval by Architect of location and appearance.

(End of Section)

SECTION 01077 -- Reference Standards

PART 1 - GENERAL

1.01 SCOPE:

Various sections of specifications contain references to specific standards. Applicable portions of standards listed that are not in conflict with specification requirements are hereby made a part of Contract Documents.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

Testing Laboratory Services----------Section 01410.

1.03 QUALITY ASSURANCE:

A. Modifications and exceptions to standards shall be considered as amendments and unmodified portions shall remain in effect.
B. In case of conflict between standards, or between specifications and standards, most stringent requirement shall govern.
C. Editions of standards shall be latest edition at time of bid opening, or contract award, as applicable, including any supplements or amendments thereto.

PART 2 - MATERIALS

2.01 SCHEDULE OF STANDARDS:

A. Reference standards are listed in various sections using abbreviations contained below.
B. Following schedule is partial; additional abbreviations and standards may not appear.

AA - Aluminum Association
AASHTO - American Association of State Highway & Transportation Officials
ACI - American Concrete Institute
AIA - American Institute of Architects
AISC - American Institute of Steel Construction
AITC - American Institute of Timber Construction
ANSI - American National Standards Institute
APA - American Plywood Association
ASHRAE - American Society of Heating, Refrigeration, & Air-Conditioning Engineers
ASTM - American Society for Testing & Materials
AWS - American Welding Society
AWPA - American Wood Preservers Associations
AAMA - Architectural Aluminum Manufacturers Association
AWI - Architectural Woodwork Institute
BIA - Brick Institute of America
BHMA - Builders Hardware Manufacturers Association
CPSC - Consumer Product Safety Commission
CRA - California Redwood Association
CTI - Ceramic Tile Institute

CLFMA - Chain Link Fence Manufacturers Association
CRSI- Concrete Reinforcing Steel Institute
FM- Factory Mutual System
FS - Federal Specification
FGMA - Flat Glass Marketing Association
HPMA - Hardwood Plywood Manufacturers Association
MS - Military Specification
NAAMM - National Association of Architectural Metal Manufacturers
NCMA - National Concrete Masonry Association
NEMA -National Electrical Manufacturers Association
NFPA - National Fire Protection Association
NPCA - National Precast Concrete Association
OSHA - Occupational Safety & Health Act
PCA - Portland Cement Association
SMACNA - Sheet Metal & Air Conditioning Contractors National Association
SFPA - Southern Forest Products Association
SDI - Steel Deck Institute
SJI - Steel Joist Institute
TCA - Tile Council of America
UL - Underwriters Laboratories
WCLIB - West Coast Lumber Inspection Bureau
WWPA - Western Wood Products Association

(End of Section)

SECTION 01100 -- Alternates

PART 1 – GENERAL

1.01 GENERAL:

A. This Section describes the work to be added under each alternate. The referenced drawings and specifications sections contain pertinent information to further describe the extent of the work to be provided under each alternate.

B. Coordinate all pertinent related work and modify surrounding work as required to complete the project under each alternate designated in the Owner-Contractor Agreement.

1.02 DESCRIPTION OF ALTERNATES:

Alternate #1 – ADD – Remove the existing 2'-2" tall concrete backstop wall (full depth) and backstop post footings to a depth four feet (4') below field surface and install 15' tall backstop fence in lieu of the tenon mounted 13' tall backstop fence on the concrete wall, in compliance with the plans and specifications. Reference Sheets SP-2, CD-4 and CD-5.

Alternate #2 – ADD – Install the brick veneer on the plaza face and top of the existing 2'-2" tall backstop wall, in compliance with the plans and specifications. Reference Sheets CD-6, CD-7 and CD-8.

(End of Section)

SECTION 01150 -- Measurement and Payment

PART 1 - GENERAL

1.01 PAYMENT FOR EXTRA WORK:

Refer to General Conditions and Supplementary General Conditions.

1.02 PROGRESS PAYMENTS:

The Owner will make progress payments monthly of amounts due as provided herein. Payments shall be made on a date of the month mutually agreeable with Owner and Contractor. The Contractor shall forward his "Request for Payment" and "Payment Estimate" to the Architect on a mutually agreeable date of the month. The "Payment Estimate" shall be broken down by the same categories as those in the "Schedule of Values and Construction Schedule". Each "Payment Estimate" shall also reflect a total actual percent completion of the Contract. The Architect will verify the "Payment Estimate". If agreement cannot be reached, the "Payment Estimate" will be revised to agree with the Architect's estimate and a statement attached thereto stating the basis for the disagreement. The Architect's certification of "Request for Payment" will be contingent upon the receipt of a properly updated "Construction Schedule". The Contractor will be paid for work in place.

The Architect may, at his discretion, authorize the inclusion of the costs of (a) material delivered to the site, and (b) preparatory work in the "Payment Estimate" and "Request for Payment". It is understood that the monthly estimates and partial payments will be subject to the correlation 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 to the amount of work done or its quality or sufficiency nor as an acceptance of the work or the release of the Contractor from any of his responsibilities under the Contract.

Both applications for payment and certificate for payment shall be submitted at the same time using AIA Forms G702 and G703, in triplicate.

In making progress payments, ten percent (10%) of the estimated amount will be retained until completion and final acceptance of the work.

1.03 SUBSTANTIAL COMPLETION:

Shall be defined to mean that the entire project or a designated portion shall be completed to such degree that all spaces can be occupied and used by the Owner, for the purposes which they were intended. Corrective work and replacement of defective materials or equipment shall not delay recognition of contract being "substantially complete" unless the extent of corrective work as estimated by the Architect exceeds two (2) percent of the Contract amount.

1.04 FINAL COMPLETION AND ACCEPTANCE:

Within five (5) days after the Contractor has given the Architect written notice that the work has been completed, the Architect and the Owner shall inspect the work and within said time, if the work is found to be completed or substantially completed, in accordance with the Contract Documents, the Architect shall issue the Owner and the Contractor a Certificate of Substantial Completion, and thereupon it shall be the duty of the Owner within ten (10) days of acceptance of the project by the City Council to issue a Certificate

of Acceptance of the work to the Contractor.

1.05 FINAL PAYMENT:

Upon issuance of the Certificate of Substantial Completion, the Architect will proceed to make final inspection and prepare final statement of the value of all work performed and materials furnished under the terms of the Contract and shall certify same to the Owner, who shall pay the Contractor within thirty (30) days after the date of the Final Acceptance, the balance due the Contractor under the terms of this Contract, provided he has fully performed his contractual obligations under the terms of this Contract; and said payment shall become due in any event upon said performance by Contractor. Neither the Certificate of Acceptance nor the Final Payment, or any provisions in the Contract Documents, shall relieve the Contractor of the obligation for fulfillment of any warranty which may be required by the specifications. All warranties and guaranties as required by the Specifications shall be delivered to the Owner before final payment is made.

(End of Section)

SECTION 01200 -- Project Meetings

PART 1 – GENERAL

1.01 PRE-CONSTRUCTION MEETING:

A pre-construction meeting will be held at the site or another location to be determined prior to the beginning of the Work and at a time designated by the Architect, but not later than 10 days after date of Notice to Proceed. Representatives of the Architect, Owner, Contractor, including designated superintendent, and all major subcontractors shall be present. The following shall serve as a minimum agenda: distribute and discuss the list of major subcontractors; tentative construction schedule; critical work sequencing; relation and coordination of prime contractors; designation of responsible personnel; processing of field decisions and Change Orders; submittal of Shop Drawings, Project Data and Samples; procedures for maintaining Record Documents; and Safety and First-Aid Procedures.

1.02 PROGRESS MEETINGS:

Schedule regular monthly progress meetings at the site on a date mutually agreed upon by the Architect, the Contractor and the Owner. Representatives of the Owner, the Architect, Contractor, and necessary Prime Sub-Contractors shall be present. Minimum agenda would be as follows: review work progress since last meeting; anticipated upcoming work and progress, note field observations, problems, and decisions; review off-site fabrication problems; revise construction schedule as indicated; review submittal schedules, expedite as required to maintain schedule; review changes proposed by the Owner for effect on construction schedule and effect on completion date.

SECTION 01310 -- Construction Schedules

PART 1 - GENERAL

1.01 GENERAL:

Provide projected construction schedules for entire work, revise every second month.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

A.	Shop Drawings, Product Data and Samples	Section 01340.
B.	Schedule of Values	Section 01370.

1.03 FORM OF SCHEDULES:

A. Bar Chart or other approved form.
B. Order: Chronological order based upon the beginning of each item of work.
C. Marking: Identify each item referenced by major specification section number.

1.04 CONTENT OF SCHEDULES:

A. Provide complete sequence of construction activity.
    1. Shop Drawings, Product Data and Samples:
        a. Submittal dates.
        b. Dates reviewed copies will be required.
    2. Decision dates for:
        a. Products specified by allowances.
        b. Selection of finishes.
    3. Product procurement and delivery dates.
    4. Dates for beginning and completion of each element of construction.
B. Identify work for separate phases or other logically grouped activities.
C. Show projected percentage of completion for each item of work as of first day of each month.
D. Provide separate subschedule, showing submittals, review times, procurement schedules, and delivery dates as required.
E. Provide subschedules to define critical portions of entire schedule as required.
F. Include calendar days from date of start of project to date of completion.

1.05 UPDATING:

A. Indicate changes occurring since previous submission of updated schedule.
B. Indicate progress of each activity, including completion dates.
C. Include:
    1. Major changes in scope.
    2. Activities modified since previous updating.
    3. Revised projections due to changes.
    4. Other identifiable changes.

1.06 SUBMITTALS:

A. Submit initial schedules within 15 days after date of Notice to Proceed.

1. Architect will review schedules and return review copy within 10 days after receipt.
2. If required, resubmit within 7 days after return of review copy.

B. Submit periodically every second month, as a minimum updated schedules accurately depicting progress to the first day of each month.

C. Submit number of copies required by Contractor, plus 4 copies to be retained by Architect.

(End of Section)

SECTION 01340 -- Shop Drawings, Product Data and Samples

1.01 GENERAL:

A. Refer to General Conditions, Article 3.12.
B. Submit to the Architect shop drawings, product data and samples required by Specification sections.
C. Prepare and submit, with construction schedule, a separate schedule listing dates for submission and lead dates for reviewed shop drawings, product data and samples for each item.

1.02 SHOP DRAWINGS:

A. Original drawings, prepared by Contractor, Subcontractor, Supplier, or Distributor, which illustrate some portion of the work, showing fabrication, layout, setting or erection details, prepared by a qualified detailer. Drawings shall be dated and marked to show the name of the Project, Architect, Contractor, originating Sub-contractor, Manufacturer or supplier and separate details as pertinent.
B. Reproductions for submittals: one PDF copy or five (5) complete sets
Reproduction for shop drawing plan: one PDF copy and three (3) opaque prints.

1.03 PRODUCT DATA:

A. Manufacturer's standard schematic drawings:
   1. Modify drawings to delete information which is not applicable to Project.
   2. Supplement standard information to provide additional information applicable to Project.
B. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations and other standard descriptive data: Submittal information which can not be reproduced economically shall be submitted in such quantities as to allow the Architect to retain three (3) copies of each after review.
   1. Clearly mark each copy to identify pertinent materials, products or models. Project name, Architect, Contractor, originating Sub-contractor, Manufacturer or Supplier and separate details, if pertinent.
   2. Show dimensions and clearances required.
   3. Show performance characteristics and capacities.
   4. Show wiring diagrams and controls.
   5. Identify specification section and locations at which materials or equipment are to be installed.
C. Reproductions for product data: seven complete sets.

1.04 SAMPLES:

Physical examples to illustrate materials, equipment and workmanship, and to establish standards by which completed work is judged.

1.05 CONTRACTOR RESPONSIBILITIES:

All Shop Drawings required by these Construction Documents are considered as "tools" of construction and not "tools" of design. By submitting Shop Drawings the Contractor acknowledges his understanding and acceptance of this principle. The Contractor shall review Shop Drawings, Project Data and Samples prior to submission to Architect. Contractor’s review shall include Contractor's stamp, initialed or signed and dated, certifying to review of submittal, verification of field dimensions and compliance with Contract Documents. Shop Drawings

stamped, signed and dated as approved by the General Contractor but showing evidence that they have not been carefully checked by the Contractor will be returned to the Contractor, rechecked by the Contractor and resubmitted to the Architect.

A. Verify:
   1. Field measurements.
   2. Field construction criteria.
   3. Catalog numbers and similar data.
B. Coordinate each submittal with requirements of work of Contract Documents.
C. Contractor's responsibility for errors and omissions in submittals is not relieved by Architect's review of submittals.
D. Contractor's responsibility for deviations in submittals from requirements of Contract Documents is not relieved by Architect's review of submittals, unless Architect gives written acceptance of specific deviations.
E. Notify Architect, in writing at time of submission, of deviations in submittals from requirements of Contract Documents.
F. Begin no work which requires submittals until return of submittals with Architect's stamp and initials or signature indicating review.
G. After Architect's review, distribute copies.

1.06 SUBMISSIONS REQUIREMENTS:

A. Schedule submissions at least 30 days before date reviewed submittals will be needed, in accordance with approved submittal schedule.
B. Submit one PDF copy via email or one reproducible transparency and three opaque prints of shop drawings, one PDF copy or five hard copies for complete sets of submittal information, one PDF copy or five hard copies of product data submittals.
C. Submit number of samples specified in each of Specification sections.
D. Accompany submittals with transmittal letter in duplicate containing:
   1. Date.
   2. Project title and number.
   3. Contractor's name and address.
   4. The number of each shop drawing, product data and sample submitted.
   5. Notification of deviations from Contract Documents.
   6. Other pertinent data.

1.07 RESUBMISSION REQUIREMENTS:

A. Shop Drawings:
   1. Revise initial drawings as required and resubmit as specified for initial submittal.
   2. Indicate on drawings any changes which have been made, other than those requested by Architect.
B. Product Data and Samples: Submit new data and samples as required for initial submittal.

1.08 ARCHITECT/ENGINEER DUTIES:

A. The Architect will review Shop Drawings, Project Data and Samples with reasonable promptness so as to cause no delay, but only for conformance with the design concept of the Project and with the information given in the Contract Documents. The Architect's approval of a separate item shall not indicate approval of an assembly in which the item functions.

B. The Architects approval of Shop Drawings, Project Data and Samples shall not relieve the Contractor of responsibility of any deviation from the Contract Documents unless the Contractor has informed the Architect in writing of each deviation at the time of submission and the Architect has given written approval to the specific deviation, nor shall Architect's approval relieve the Contractor from responsibility for errors or omissions in the Shop Drawings, Project Data and Samples.

1.09 DISTRIBUTION OF SUBMITTALS AFTER REVIEW:

A. Distribute copies of shop drawings and product data which carry Architect's stamp as required for construction, including Contractor's file, job site file, other prime Contractors, Subcontractors, Supplier and Fabricator.
B. Return 2 sets of prints from approved transparencies to Architect for record.

(End of Section)

SECTION 01370 -- Schedule of Values

PART 1 - GENERAL

1.01 GENERAL:

A. Submit to Architect a Schedule of Values within 10 days after date of Notice to Proceed or 20 days prior to submitting first Application for Payment, whichever is the earliest. No payments will be made until Schedule of Values is submitted and reviewed in form outlined below.
B. List quantities of materials specified under unit price allowance.
C. Upon request by Architect, support values given with such data that will substantiate their accuracy.
D. Use Schedule of Values only as basis for Contractor's Applications for Payment.

1.02 FORM OF SUBMITTAL:

A. Submit typewritten Schedule of Values on AIA form G702A, "Continuation Sheet" of Application and Certificate for Payment.
B. Use the Table of Contents of this Project Manual as basis of format for listing itemized cost of Divisions 2-16. In general, itemize each division by section titles.
C. Identify each line item with number and title as listed in the Table of Contents of this Project Manual.

1.03 PREPARING SCHEDULE OF VALUES:

A. In addition to line item costs of sections in Division 2-16, furnish line item costs for each of the following general cost items:
    1. Mobilization
    2. Performance Bond, Payment Bond and Maintenance Bond
    3. Field Supervision and Layout
    4. Temporary Facilities and Controls
    5. Contractor's Fee
    6. Trench Safety
    7. Storm Water Pollution Prevention Plan
    8. Erosion Control
B. Include proper share of overhead, profit and labor in each line item in Schedule of Values.
C. Sum of total costs of all items listed in Schedule shall equal total Contract Sum.
D. Itemize separate line item cost for work required by each section of this Project Manual.
E. For each line item which has an installed value of more than $25,000, break down costs to list major products or operations under each item.

1.04 REVIEW AND SUBMITTAL:
A. After review by Architect, revise and resubmit Schedule as required.
B. Resubmit revised Schedule in same manner.

(End of Section)

SECTION 01410 -- Testing Laboratory Services

PART 1 - GENERAL

1.01 SCOPE:

A. An independent testing laboratory, selected/approved by the Owner and paid for by the Contractor, will perform the professional testing and laboratory services.
B. Requirements of the Conditions of the Contract of this Project Manual apply to all work required for this Section.
C. Materials and workmanship not meeting the required standards or performance obligations are to be removed and replaced at the Contractor's expense, including all subsequent testing. Contractor will pay for additional samples and tests required for the Contractor's Conveniences.
D. All inspections and tests shall be in accordance with the rules and regulations of the building code and all jurisdictional authorities of the State of Texas, the specifications of the ASTM, and other respective technical societies, organizations, or bodies having relation to the work or materials inspected or tested.
E. Where the terms "inspector" and "testing laboratory" are used, they mean and refer respectively to an officially designated and accredited inspector of the testing laboratory and the testing laboratory engaged.
F. Employment of Testing Laboratory shall in no way relieve the Contractor of his obligation to perform work in accordance with the Contract Documents.

1.02 WORK INCLUDED: The Contractor will schedule the scope of testing by the testing laboratory. The Landscape Architect will notify the Contractor as to which tests will be performed. The Owner and/or Architect may require any of the following tests:

A. Perform tests on earthwork and soil stabilization.
B. Making slump tests of all concrete
C. Preparing test cylinders for all concrete.
D. Compression testing of all specimen cylinders taken from all concrete actually placed throughout the work.
E. Keeping inspection and test logs of all inspections and tests of concrete.
F. Testing of Asphaltic Concrete Paving.
G. Inspecting and testing of all structural steel as specified herein.
H. Tendon elongations of post tensioned concrete.
I. Stressing of post-tensioned tendons.
J. Submitting to Architect, Engineer, Contractor, and Owner certifications, records, and reports of all inspections and tests.

1.03 Qualification of LABORATORY

A. Meet "Recommended Requirements for Independent Laboratory Qualification," published by American Council of Independent Laboratories.
B. Meet basic requirements of ASTM E329, "Standards of Recommended Practice for Inspection and Testing Agencies for Concrete and Steel as Used in Construction."
C. Authorized to operate in the State in which the Project is located.
D. Testing equipment shall be calibrated at reasonable intervals by devices of accuracy traceable to either:
    1. National Bureau of Standards.
    2. Accepted values of natural physical constants.

1.04 RELATED WORK:

A. Chemical and physical analyses of reinforcing steel and structural steel will be provided by the manufacturers.
B. Preliminary tests on materials for concrete and the design of concrete mixes will be provided and paid for by the Contractor. Design of concrete mix shall be approved by Architect and Owner.

1.05 RESPONSIBILITIES AND DUTIES OF CONTRACTOR:

A. Provide the Laboratory, without cost to Owner, adequate quantities of representative samples of materials proposed for use which are required to be tested.
B. Advise Laboratory sufficiently in advance of construction operations to allow Laboratory to complete any required check tests and assign personnel for field inspection and testing as specified.
C. Provide adequate facilities for safe storage and proper curing of concrete test samples on project site for the first 24 hours and also for subsequent field curing as required by ASTM Specifications C31.
D. Furnish incidental labor and facilities:
    1. To provide access to Work to be tested.
    2. To obtain and handle samples at the project site or at the source of the product to be tested.
    3. To facilitate inspections and tests.
    4. For safe storage and proper curing of concrete test samples on project site for the first 24 hours and also for subsequent field curing as required by ASTM Specifications C31.
E. Notify Laboratory and Architect sufficiently in advance of operations to allow Laboratory assignment of personnel and scheduling of tests.
    1. When tests or inspections cannot be performed after such notice, reimburse Laboratory of personnel and travel expenses incurred due to Contractor's negligence.
    2. Make arrangements with Laboratory and pay for additional samples and tests required for Contractor's convenience.
    3. Make arrangements with Laboratory and pay for additional samples and test required when initial tests indicate non-compliance with Contract Documents, including load tests.
    4. Pay the Testing Laboratory for such tests or inspections as are performed exclusively for the Contractor's convenience.

1.06 AUTHORITY AND DUTIES OF LABORATORY PERSONNEL:

A. Cooperate with the Architect and Contractor; provide personnel after due notice.
B. Laboratory personnel shall inspect and/or test materials, assemblies, specimens and work performed including design mixes, methods, and techniques as specified and report to the Architect and Owner the progress thereof.
C. If the material furnished and/or work performed fails to meet requirements of the Contract Documents, inspector shall promptly notify the Contractor, Architect and Owner of such failures.
D. The inspector is not authorized to revoke, alter, relax, enlarge or release any requirement of the Drawings and Specifications, or to approve or accept any portion of the work.
E. Test reports shall indicate if tested materials and/or procedures meet or fail to meet the project specifications or other controlling codes or ordinances.

1.07 SUBMITTALS AND CERTIFICATION:

A. Promptly submit written report of each test and inspection; distribution as designated by Architect/Engineer. Each report shall include:
   1. Date issued.
   2. Project title and number.
   3. Testing Laboratory name, address and telephone number.
   4. Name and signature of Laboratory inspector.
   5. Date and time of sampling or inspection.
   6. Record of temperature and weather conditions.
   7. Date of tests.
   8. Identification of products and Specification section.
   9. Location of sample of test in the Project.
   10. Type of inspection of test.
   11. Results of test and compliance with Contract Documents.
   12. Interpretation of test reports.

B. The Testing Laboratory shall submit one (1) copy each to the Landscape Architect, Architect, Engineer, Contractor, Supplier of the material being tested (e.g. concrete supplier) and up to three copies to the Owner of certification of each and every inspection and test required to be made as part of the work of this Section, or ordered by the Architect or the Owner to be made either in addition to or supplementary to inspecting and testing specified herein or in other Sections of the Specifications.

C. Certificates shall state all details of each inspection and test to indicate satisfactory compliance with requirements of the Drawings and Specifications. Also state in certificate any and all unsatisfactory conditions or failure to comply in addition to reporting immediately to the Architect all items of unsatisfactory conditions and failure to comply with the requirements of the Drawings and Specifications.

PART 2 - MATERIALS

Not Applicable

PART 3 - EXECUTION

3.01 TESTING OF EARTHWORK:

A. Testing Laboratory shall perform the following tests on select fill areas:
   1. Plasticity index tests on fill material prior to use to determine compliance with specified materials.
   2. Two (2) density tests for each 5,000 square feet of area per lift in place.
   3. One Standard Proctor curve for each type of fill material.

B. Testing Laboratory shall perform the following tests on crushed stone base material:
   1. One Standard Proctor curve. ASTM 1557
   2. Two (2) density tests for each 5,000 square feet of area per lift in place.

C. Testing Laboratory approved shall perform the following tests on stabilized subgrades.
   1. Two density tests in place for each 5,000 square feet of area per lift.
   2. Laboratory shall make on-site visual inspection of lime treatment to confirm the type and amount of lime used.

3.02 REINFORCING STEEL:

A. If reinforcing steel is purchased direct from a United States mill, manufacturer's test sheets will be sufficient. Steel supplier shall furnish mill certificate reports.

B. If steel is from an undetermined origin or manufacturer's test sheets or mill certificate reports are unavailable, perform tension and bending tests on three separate samples of each size of bar for every five tons of each type of steel as specified in the appropriate ASTM Specifications. Contractor shall furnish all material for testing and pay for all such tests.

C. Perform visual inspection prior to placement of size, type and quality of materials.

D. Observe and report on placement of reinforcement, including size, quantity, vertical location, horizontal spacing, correctness of bends, splices, clearances between bars and forms, firmness of installation, and security of supports and ties, immediately prior to concreting.

3.03 ASPHALTIC CONCRETE PAVING:

A. Submit proposed mix design to Architect for approval prior to starting asphaltic concrete installation.

B. Asphaltic Concrete Tests:
   1. Make one laboratory Density and Stability Test, T.H.D. Bulletin C14, on each type of asphaltic concrete for each day's operation.
   2. Make one Field-in-Place Density Test, D1188-68 on each type of asphaltic concrete for each day's operation. Samples to be obtained by Contractor.
   3. Make one extracting and gradation tests, ASTM D2172-67, on each type of asphaltic concrete for each day's operation.

C. Thickness Test: Examine pavement at selected locations to determine whether specified total thickness of asphaltic concrete has been placed. Make a minimum of one test for each 5,000 sq. ft. of paving. If average thickness is deficient by no more than 1/4" and no individual measurement is deficient by more than 5/8", pavement meets design requirements. If average thickness is deficient by more than 1/4", or if any individual thickness determination is deficient 5/8", the pavement does not meet design requirements. Deficient areas shall be defined, removed, and replaced or adjusted to design thickness by methods approved by Architect.

3.04 TESTING OF CONCRETE PAVING, CURBS, GUTTERS AND WALKS:

A. The Testing Laboratory shall perform the following tests:
   1. Concrete Mix design
   2. Concrete compressive strength on cylinders: one at seven (7) days and two at twenty-eight (28) days.
   3. Concrete slump determination.

B. All inspection, cylinder(s) required, and testing shall be in accordance with testing specified for concrete.

3.05 CONTROLS AND TESTING OF CONCRETE:

A. During the progress of mixing and placing concrete on job, take composite samples in accordance with ASTM C172. Transport, cure and store cylinders in accordance with the Standard Method for Making and Curing Concrete Compression and Flexure Test Specimens in the Field, ASTM Specifications C-31-66. Perform compression tests of one specimen after seven (7) days, two after twenty-eight (28) days and hold one in reserve.

B. Conduct compression tests of concrete in accordance with ASTM Specifications, Designation C-39-66.
C. See Drawings for locations for various strengths of concrete.
D. Test Cylinders: During progress of work, test cylinders shall be made and tested for each different mix placed in any one day. For every concrete placement of 100 cubic yards or part thereof over 10 cubic yards, four compression test cylinders will be made by Testing Laboratory of samples taken during pour. Make test cylinders in accordance with ASTM Designation C-31-66 and test in accordance with ASTM Designation C-29-66; one at seven (7) days and two at twenty-eight (28) days and hold one in reserve for normal cement; and one at three (3) days and one at seven (7) days for high-early strength cement. Make additional sets of four cylinders for concrete placements from 100 yards to 200 yards and a third set for pours exceeding 200 yards.
E. Slump Tests:
    1. Make slump tests for each 100 cubic yards of concrete placed by Contractor, and for each set of cylinders in accordance with ASTM Designation C-143-66.
    2. Slump shall conform to limits shown on Drawings.
F. Job site inspection of each batch of concrete, adjusting amounts of mixing water to assure uniform consistency from truck to truck.
G. Check mixing time of concrete in trucks.
H. Laboratory technicians shall inspect materials and manufacture of concrete, and report findings. When it appears that material furnished or work performed by Contractor fails to fulfill Specification requirements, technicians shall direct attention of Architect and Contractor to such failure.
I. Not Used.
J. Laboratory technicians do not act as foremen or perform other duties for the Contractor. Work will be checked as it progresses, but failure to detect any defective work or materials shall not in any way prevent later rejection when such defect is discovered. Laboratory technicians are not authorized to revoke, alter, relax, enlarge, or release any requirement of the Specifications, nor to approve or accept any portion or work.
K. Tests reports shall show time test was made, truck ticket number, slump and time of batching and location of each placement.
L. When strength of test cylinders falls below design strength and Architect requires drilling of concrete core specimens, test core specimens in accordance with ASTM Specifications, Designation C-42-64.
M. Report promptly to Architect all details of reasons for rejection of any and all quantities of concrete. Give all information concerning locations of the concrete pours, quantities, date of pours and other pertinent facts concerning concrete represented by the specimens.

3.06 INSPECTION OF POST-TENSIONED TENDONS:

A. Testing Laboratory will perform field quality control of stressing operations.
B. Laboratory will record locations of all live tendon anchorages on a diagrammatic drawing by tendon mark and will record in tabular form the tendon marks, tendon design anchor force, jack gauge reading at transfer and actual measure elongation. Elongations shall be determined by mark on tendon extensions before and after stressing. Copies of these records shall be furnished immediately to the Architect and Contractor.

3.07 INSPECTING STRUCTURAL STEEL:

A. Inspect all structural steel during fabrication and during and after erection for conformance with Contract Drawings and Shop Drawings. Any cases of insufficient bracing or buying, or other unsafe conditions shall be immediately called to attention of Contractor and reported to Architect.

B. Visually inspect and check for size and appearance. When directed by Architect, visual inspection shall be supplemented by other means of testing, such as radiographic, ultrasonic, etc.

C. No burning or other field corrections are permitted without express permission of the Architect. Immediately report any violation to Architect.

3.08 QUALIFICATIONS OF WELDERS: Fabricator and erector shall provide the Testing Laboratory with names of welders to be employed on work, together with certification that each of these welders has passed qualification tests within last year using procedures covered in the American Welding Society Standard D1.0-63.

(End of Section)

SECTION 01500 -- Temporary Facilities and Controls

1.01 CONTRACTOR'S BUILDINGS:

Permissible 50' from street.

1.02 SANITATION:

Provide a portable chemical toilet complying with all building and sanitation ordinances, laws and codes; ensure that all construction personnel use the provided facility.

1.03 USE OF SITE:

The Owner will make the project site and access to the project site available to the Contractor for the operations of the Contract. Should it be necessary for the Contractor to use portions of existing streets and sidewalks for operations, such use shall be strictly in accordance with requirements and approval of the authority having jurisdiction.

1.04 STORAGE OF MATERIALS:

A. Storage area shall be contained within the limits of the site but not under the canopies of existing trees, in landscaped areas or sidewalks.
B. Contractor shall provide on the premises where directed suitable storage sheds (substantial and watertight) in which he shall store all materials subject to damage by weather. All storage sheds shall be of sufficient size to hold all materials required on the site at one time and shall have floors raised at least 6" above the ground on heavy joists or sleepers. Storage sheds shall have neat appearance.
C. Major Subcontractors shall provide such temporary buildings as, in the opinion of the Architect, may be necessary to fully protect their materials, equipment, apparatus, etc., during the progress of the work. Such buildings shall have neat appearance.
D. Building materials, Contractor's equipment, etc., shall be stored on the premises so that it may be observed at all times by the Architect.
E. All materials affected by the weather shall be covered and protected and kept free from damage while being transported to the site.
F. The building shall not be used as storage facilities unless approved by the Architect.
G. Subcontractors desiring to store materials scheduled for immediate use may do so only in locations as directed by the General Contractor and approved by the Architect.
H. The Contractor shall make provisions for additional storage at no cost to Owner in the event that additional storage area is required beyond that provided by the project site.
I. All stored materials shall be available for inspection by Architect and Owner at any time.

1.05 TEMPORARY OFFICES: (OPTIONAL)

A. Provide a separate Field Office for the Contractor and Architect's use. A minimum of 8' X 10' office space with desk and chair, layout table, plan rack, and two drawer file cabinets shall be provided.
B. The Contractor shall provide one land line telephone for the use of all employed at the project. The Contractor shall pay for the installation, maintenance, removal, and all charges for the use of telephones, except charges for long distance messages which shall be paid by the person making the call. The telephones shall remain until the full completion of the work, and shall be removed when directed by the Architect.

1.06 TEMPORARY ENCLOSURES:

Erect temporary enclosures over openings when weather conditions render such action necessary for proper installation of any portion of the Work.

1.07 UTILITIES FOR TESTING

Any water, gas, or electricity required for testing of equipment installed under this contract shall be the responsibility of this Contractor unless specified differently in specific sections.

1.08 ELECTRICAL ENERGY:

A. Contractor shall make all necessary applications, pay all fees and charges, obtain necessary permits and provide and maintain electrical energy for power and light and as required for items of construction, and as necessary for providing and maintaining artificial light in the progress of any branch of the work. Contractor shall make arrangements for temporary connection locations and metering charges. He shall also provide all temporary wiring necessary.
B. When Owner occupies a portion or part of the building prior to substantial completion of the entire project, Owner will pay costs of utility services for that portion or part of the building. Contractor shall provide temporary electrical services to remaining portions of project until substantial completion of entire project.

1.09 TEMPORARY SEWER AND DRAIN CONNECTIONS: (Not required)

1.10 TEMPORARY FIRE PROTECTION:

A. The Contractor and Subcontractor shall observe and the Contractor shall enforce throughout the work during the whole period of construction all requirements of City, State and Insurance authorities to minimize the fire hazards during the progress of the work.
B. Combustible refuse shall be removed from building daily.
C. No salamanders will be permitted.
D. The Contractor shall provide and maintain fire extinguishers, fire hoses and other equipment as necessary for proper fire protection during construction. Such equipment is to be used for fire protection only.

1.11 TEMPORARY LADDERS, SCAFFOLDS, HOISTS:

Contractor shall furnish and maintain equipment such as temporary ladders, ramps, scaffolds, hoists, runways, derricks, chutes, etc., as required for the proper execution of the work. Such apparatus, equipment, and construction shall meet requirements of the Labor Law, Federal Safety Laws, and other State or Local Laws applicable thereto. Contractor shall provide temporary construction elevator or other suitable means for egress to upper floors for use of all trades.

1.12 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 traveling public than is necessary. The Contractor shall make provisions by bridges or otherwise at all sidewalks and driveways for the free passage of pedestrians and vehicles. The materials excavated, the construction materials or plant used in the construction of the work, shall be placed so as not to endanger the work or prevent free access to all fire

hydrants, water valves, gas valves, manholes for telephone, telegraph signal or electrical conduits, sanitary or storm sewers, or fire alarm or police call boxes in the vicinity.

1.13 BARRICADES, FENCE, LIGHTS, AND WATCHMEN:

A. Where the work is carried on, in or adjacent to any road, parking area or public place, the Contractor shall at his own cost and expense, furnish and erect such barricades, fences, lights, danger signals, and shall provide watchmen and take other such precautionary measures as are necessary for the protection of persons or property.

B. At the completion of construction, all barricades, fences and all traces thereof shall be removed, holes filled, paving repaired and cleaned, etc.

1.14 TEMPORARY WATER:

All water required in the performance of the Contract shall be provided and paid for by the Contractor. Furnish and install all mains, laterals, branch lines and service piping and fittings to supply temporary water in sufficient quantity at required locations of the site and for temporary and permanent irrigation to establish a stand of turf grass. Remove all temporary connections and piping and close all openings at the end of Work.

1.15 TEMPORARY HEAT:

Temporary heat, fuel and service as necessary to protect all work and materials against injury from dampness and cold until final acceptance, Owner shall assume all expenses of heating from date of occupancy. In addition, provide temporary heat as follows:

A. During placing, setting and curing of concrete, provide sufficient heat to ensure heating of spaces involved to not less than 50 degrees F.
B. From beginning of application of plaster and during setting and curing period, sufficient heat to produce temperature of not less than 50 degrees F.
C. During all phases of interior finish work, and until final acceptance or occupancy by Owner, provide sufficient heat to produce a temperature of not less than 70 degrees F.
D. Before Substantial Completion, all registers, diffusers and filters shall be cleaned or replaced as appropriate.

1.16 TEMPORARY BUILDINGS:

All temporary buildings shall be weather and watertight and maintained in a neat, orderly appearance for the duration of the Work.

A. Enclosed Storage Areas: Contractor and each subcontractor, for their own use, shall provide and maintain watertight storage sheds for materials which might be damaged by weather. Floors should be raised above ground level. Remove from site at completion of Work.
B. Temporary Public Protection: Should government, state or local authorities require construction of temporary barricades or covered passageways, they shall be constructed by the Contractor at no additional cost to the Owner, shall be approved by the Architect, and shall be painted and maintained in an orderly, neat appearance at all times and be repainted when necessary and as directed by Architect.
C. Removal of Temporary Construction: Temporary office facilities, toilets, storage sheds, and other construction of temporary nature shall be removed from the site as soon as,

in the opinion of the Architect, the progress of the work will permit; and the portions of the site occupied by same shall be properly reconditioned and restored to a condition acceptable to the Architect.

1.17 PROTECTION FOR WORK IN PLACE:

Work in place that is subject to injury, because of operations carried on adjacent thereto shall be covered or substantially enclosed with adequate protection. Permanent openings used as thoroughfares for the introduction of work or material to the structure shall have heads, jambs and sills well-blocked and boarded. All forms of protection shall be constructed in a manner that, upon completion, the entire Work will be delivered to the Owner in proper, whole and unblemished condition.

1.18 PUMPING AND DRAINAGE:

Surface or subsurface water or other fluids shall not be permitted to accumulate in excavations or in or about the premises and vicinity. Water, or other fluid, shall be controlled and suitably disposed of by means of temporary pumps, piping, drainage lines, or other methods approved by Architect.

1.19 PROTECTION AND WARNING:

Provide and erect all temporary planking, bridges, fences, bracing, shoring, needle pinning, and warning signs and lights required by jurisdictional authorities and/or site conditions to protect persons, streets and adjacent on-site or off-site property. Bidders shall ascertain legal and other requirements.

(End of Section)

SECTION 01580 -- Project Identification & Signage

PART ONE

1.1 DESCRIPTION:

1.1.1 Work included: Temporary Signage: Erect one (1) temporary project sign at the location staked with the Owner and Landscape Architect. No signs or advertising of any kind will be allowed on the job site except as specifically approved in advance by the Landscape Architect.
Permanent Signage: Furnish and install one (1) permanent dedication plaque at location determined by Owner. The plaque shall contain the City's park dedication information.

PART TWO

2.1 TEMPORARY SIGNAGE MATERIAL:

2.1.1 The temporary sign shall be professionally lettered using medium blue letters over a solid white background. The verbiage and general layout of the sign will reflect the information indicated on the sample layout following PART THREE of this specification. A sample layout must be submitted to the Landscape Architect and Owner for approval.

2.1.2 The sign board shall be 16 ga. (min.) steel or 3/4" exterior A - C plywood. Minimum size 48" X 96".

2.1.3 The sign posts will be 4" X 4" Southern Yellow Pine S4S, of a sufficient length to support the sign at the height designated in PART THREE.

2.1.4 Use hot dipped galvanized screws or other galvanized fasteners to attach the sign to the post.

2.2 PERMANENT SIGNAGE MATERIAL:

2.2.1 The permanent plaque shall be a 20" x 26" aluminum plaque, single line border, black leather textured background. Submit rubbing to City for approval. The exact verbiage and layout of the plaque will be determined by the City Staff during the construction submittal process. The general layout of the permanent plaque is indicated following part three of this specification.

PART THREE

3.1 EXECUTION-TEMPORARY SIGN:

3.1.1 Erect the temporary signs within the project site at the designated locations. Sign face will be parallel to adjoining roadways. The bottom of the signboard will be not less than 48" above the existing grade.

3.1.2 The Contractor will maintain the temporary sign in a plumb, level condition. The sign will be kept clean of mud, debris, graffiti or other defacement for the entire contract period. The area around the sign shall be maintained by mowing, weed removal and litter pick-up throughout the construction process, minimally twice weekly.

3.2 EXECUTION - PERMANENT SIGNS:

3.2.1 The permanent plaque shall be securely mounted to the exterior face of the restroom building; in a conspicuous location as determined by the Owner and Architect. If the Owner desires that the plaque not be fastened to the restroom the plaque shall be mounted to the face of a concrete pedestal constructed for the purpose. The concrete pedestal shall be 24” tall by 30” wide. The face of the concrete pedestal shall be tilted thirty degrees (30°) above the horizontal (facing the area that the sign shall be viewed from). The concrete pedestal shall be reinforced with two mats of reinforcing consisting of No. 3 rebar at 12” o.c.

3.2.2 The fasteners used to mount the plaques shall not corrode, rust, or stain the face of the mounting surface in any manner. The Contractor shall submit the intended fastening method for approval by the Architect.

3.2.3 The Contractor shall maintain the plaque through final acceptance of the project. The plaques shall be kept clean of mud, debris, graffiti, and other defacement.

TEMPORARY SIGN (Minimum Size - 4' x 8')

THE CITY OF CARROLLTON
Parks & Recreation Department

JOSEY RANCH FIELD 6
ADAPTIVE SPORTS FIELD

Parks & Recreation Dept. Contractor’s Name
City Logo Phone # Logo & Info

Anticipated Completion Date

PERMANENT SIGN/PLAQUE (Minimum Size – 20” x 26”)

JOSEY RANCH FIELD 6 ADAPTIVE SPORTS FIELD
CITY OF CARROLLTON
PROJECTED COMPLETION DATE

CITY COUNCIL
XXXXXXXXXX
XXXXXXXXXX
XXXXXXXXXX
XXXXXXXXXX

CITY MANAGER
XXXXXXXXXX

ASSISTANT CITY MANAGER
XXXXXXXXXX

DIRECTOR OF PARKS & RECREATION
XXXXXXXXXX

PARKS MANAGER
XXXXXXXXXX

PARKS BOARD
XXXXXXXXXX
XXXXXXXXXX
XXXXXXXXXX
XXXXXXXXXX

CONTRACTOR
XXXXXXXXXX

PARKS C.I. PROJECT MANAGER
XXXXXXXXXX

LANDSCAPE ARCHITECT
XXXXXXXXXX

(End of Section)

SECTION 01630 -- Substitutions

1.01 PRODUCT LIST:

A. Within 30 days after date of Contract, submit to Architect 5 copies of complete list of products and materials which are proposed for installation.
B. Prepare list on basis of each Specification section.
C. For products specified under reference standards, include with listing of each product:
   1. Name and address of manufacturer.
   2. Trade name.
   3. Model or catalog designation.
   4. Manufacturer's data, including performance and test data, reference standards.

1.02 CONTRACTOR'S OPTIONS:

A. For products specified only by reference standards, select any product meeting standards, by any manufacturer.
B. For products specified by naming several products or manufacturers, select any product and manufacturer named.
C. For products specified by naming one or more products, but indicating the option of selecting equivalent products by stating "or equal" after specified product, Contractor must submit request, as required for substitutions, for any product not specifically named.
D. For products specified by naming only one product and manufacturer, there is no option, unless a substitution is approved as specified below.

1.03 SUBSTITUTIONS:

A. Within 30 days after date of Contract, Architect will consider formal requests from Contractor for substitutions of products in place of those specified. No request for substitutions will be considered after this date. Requests for substitutions shall include data listed in Sections “B” and "C" below.
B. Submit 5 copies of request for substitution. Include in substitution:
   1. Complete data substantiating compliance of proposed substitution with Contract documents. Substantiating data shall be highlighted and cross referenced to the specified product or procedure in such a manner that is easily reviewed and verified.
   2. For products:
      a. Product identification, including manufacturer's name and address.
      b. Manufacturer's literature, including product description, performance and test data and reference standards. Highlighted and cross referenced to the specific product.
      c. Samples, if applicable.
      d. Name and address of similar projects on which product was used and date of installation.
   3. For construction methods:
      a. Detailed written descriptions of proposed method.
      b. Complete drawings showing revisions required to accommodate substitutions. Drawings shall be prepared by qualified draftsman and shall include new details of all conditions detailed on Drawings as well as any changes required of other products to accommodate the proposed substitution.

4. Itemized comparison of proposed substitution with product or method specified. Pertinent data comparing both or several products shall be highlighted so Architect is not required to laboriously extract the information.
5. Data relating to changes in construction schedule.

C. In making request for substitution, Bidder/Contractor represents:
1. He has personally investigated proposed product or method and determined that it is equal or superior in all respects to that specified.
2. He will provide same guarantee for substitution as for product or method specified.
3. He will coordinate installation of accepted substitution into work, making such changes as may be required for work to be complete in all respects.
4. He waives all claims for additional costs related to substitution which subsequently becomes apparent.

D. Substitutions will not be considered if:
1. They are indicated or implied on shop drawings or product data submittals without formal request as submitted in accordance with Article 1.03 of this Section.
2. Acceptance will require substantial revision of Contract Documents.
3. All conditions affected by the substitution have not been thoroughly redetailed and redrawn by the Contractor as part of the requested substitution.
4. If pertinent data comparing intended substitution(s) with specified item is not highlighted as outlined above.

(End of Section)

SECTION 01700 -- Project Closeout

PART 1 - GENERAL

1.01 RELATED REQUIREMENTS SPECIFIED ELSEWHERE:

A. Time of Final Payment: The Agreement
B. Completion; Waiver of Claims: General Conditions
C. Liquidated Damages: Supplementary Conditions
D. Cleaning: Section 01710
E. Project Record Documents: Section 01720
F. Operation and Maintenance Data: Section 01740
G. Closeout Submittals Required of Trades: The respective sections of specifications.
H. Storm Water Pollution Prevention Plan: Section 01750

1.02 SUBSTANTIAL COMPLETION:

A. Contractor:
   1. Submit written certification to Architect that Project, or designated portion of Project, is substantially complete.
   2. Submit list of major items to be completed or corrected.
B. Architect will make an inspection within seven days after receipt of certification, together with Owner's Representative.
C. Should Architect consider the Work is substantially complete:
   1. Contractor shall prepare, and submit to Architect, a list of items to be completed or corrected, as determined by the inspection.
   2. Architect will prepare and issue a Certificate of Substantial Completion, AIA G704, complete with signatures of Owner and Contractor, accompanied by Contractor's list of items to be completed or corrected, as verified and amended by Architect.
   3. Owner Occupancy of Project or Designated Portion of Project:
      a. Contractor shall:
         1. Obtain certificate of occupancy.
         2. Perform final cleaning in accordance with Section 01710.
      b. Owner will occupy Project, under provisions stated in Certificate of Substantial Completion.
   4. Contractor: Complete work listed for completion or correction within designated time.
D. Should Architect consider that Work is not substantially complete:
   1. He shall immediately notify Contractor, in writing, stating reasons.
   2. Contractor: Complete Work and send second written notice to Architect, certifying that Project or designated portion of Project is substantially complete.
   3. Architect will reinspect Work as provided in the Supplementary General Conditions.

1.03 FINAL INSPECTION:

A. Contractor shall submit written certification that:
   1. Contract Documents have been reviewed.
   2. Project has been inspected for compliance with Contract Documents.
   3. Work has been completed in accordance with Contract Documents.
   4. Equipment and systems have been tested in presence of Owner's Representative and are operational.
   5. Project is completed, and ready for final inspection.
B. Architect will make final inspection within seven days after receipt of certification.

C. Should Architect consider that Work is finally complete in accordance with requirements of Contract Documents, he shall request Contractor to make Project Closeout submittals.
D. Should Architect consider that Work is not finally complete:
   1. He shall notify Contractor, in writing, stating reasons.
   2. Contractor shall take immediate steps to remedy the stated deficiencies, and send second written notice to Architect certifying that Work is complete.
   3. Architect will reinspect Work.

1.04 REINSPECTION COSTS: Should Architect be required to perform second inspections because of failure of Work to comply with original certifications of Contractor, Owner will compensate Architect for additional services, and deduct amount paid from final payment to Contractor as provided in Supplementary General Conditions.

1.05 CLOSEOUT SUBMITTALS:

A. Project Record Documents: To requirements of Section 01720 and Section 02810.
B. Operation and Maintenance Data: To requirements of Section 01740.
C. Guarantees and Bonds specified in appropriate sections of specifications.
D. Maintenance Bond if required by Contract Documents.
E. Keys and Keying Schedule: To requirements of Section 08700, Finish Hardware.
F. Deliver evidence of compliance with requirements of governing authorities.
   1. Mechanical: Section 15
   2. Electrical: Section 16

1.06 EVIDENCE OF PAYMENTS AND RELEASE OF LIENS:

A. Contractor's Affidavit of Payment of Debts and Claims: AIA G706.
B. Contractor's Affidavit of Release of Liens: AIA G706A, with:
   1. Consent of Surety to Final Payment: AIA G707.
   2. Contractor's release and waiver of liens.
   3. Separate releases of waivers of liens for subcontractors, suppliers, and others with lien rights against property of Owner, together with list of those parties (verify with Owner).
C. All submittals shall be duly executed before delivery to Architect.

1.07 FINAL ADJUSTMENT OF ACCOUNTS:

A. Submit final statement of accounting to Architect.
B. Statement shall reflect all adjustments
   1. Original Contract Sum
   2. Additions and deductions resulting from:
      a. Previous Change Orders
      b. Cash Allowances
      c. Unit Prices
      d. Other Adjustments
      e. Deductions for Uncorrected Work
      f. Penalties and Bonuses
      g. Deductions for Liquidated Damages
      h. Deductions for Reinspection Payments
   3. Total Contract Sum, as adjusted
   4. Previous payments
   5. Sum remaining due

C. Architect will prepare final Change Order, reflecting approved adjustments to Contract Sum not previously made by Change Orders.

1.08 FINAL APPLICATION FOR PAYMENT: Contractor shall submit final application in accordance with requirements of General and Supplementary Conditions.

1.09 FINAL CERTIFICATE FOR PAYMENT:

A. Architect will issue final certificate in accordance with provisions of General Conditions.
B. Should final completion be materially delayed through no fault of Contractor, Architect may issue a Semi-Final Certificate for Payment, in accordance with provisions of General Conditions.

1.10 POST-CONSTRUCTION INSPECTION:

A. Prior to expiration of one year from Date of Substantial Completion, Architect will make visual inspection of project in company with Owner and Contractor to determine whether correction of Work is required, in accordance with provisions of General Conditions.
B. For Guarantees beyond one year, Architect will make inspections at request of Owner, after notification to Contractor.
C. Architect will promptly notify Contractor in writing of any observed deficiencies.

(END OF SECTION)

SECTION 01710 -- Cleaning Up

PART 1 - GENERAL

1.01 GENERAL:

A. Provide necessary cleaning during construction and final cleaning at completion of work.
B. If the Contractor fails to clean up at the completion of the work, the Owner may do so as provided in Paragraph 2.4 General Conditions and charge the cost thereof to the Contractor.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

Cleaning up required for specific trades or work is specified in Section pertaining to that trade or work.

1.03 REQUIREMENTS OF REGULATORY AGENCIES:

A. Fire Protection: Store volatile waste in covered metal containers, and remove from premises daily.
B. Pollution Control: Conduct clean-up and disposal operations to comply with local ordinances and anti-pollution laws.
   1. Burning or burying of rubbish and waste materials on the project site is prohibited.
   2. Disposal of volatile fluid wastes (such as mineral spirits, oil, or paint thinner) in storm or sanitary sewer systems or into streams or waterways is prohibited.

PART 2 - MATERIALS

2.01 CLEANING MATERIALS:

A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.01 DURING CONSTRUCTION:

A. Oversee cleaning and insure that structures and grounds are maintained free from accumulations of waste materials and rubbish.
B. Sprinkle dusty debris with water.
C. At not less than every week during progress of work, clean up structures and site and dispose of waste materials, rubbish and debris.
D. Provide dump containers and locate on site for collection of waste materials, rubbish and debris.
E. Do not allow waste materials, rubbish and debris to accumulate and become an unsightly or hazardous condition.
F. Remove waste materials, rubbish and debris from the structures and site and legally dispose of at public or private dumping areas, off Owner's property.
G. Vacuum clean interior building areas when ready to receive finish painting and continue vacuum cleaning on an as-needed basis until building is ready for acceptance or occupancy.
H. Lower waste materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.

I. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly-painted surface.
J. Maintain temporary and permanent project signage in a clean and attractive condition.

3.02 FINAL CLEANING:
A. Use experienced workmen, or professional cleaners, for final cleaning.
B. At completion of construction and just prior to acceptance or occupancy, conduct a final inspection of exposed surfaces.
C. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials, from all surfaces.
D. Repair, patch and touch-up marred surfaces to match adjacent finishes.
E. Broom clean paved surfaces; rake clean other surfaces of grounds.
F. Dust all walls, metal, wood and similar finished materials.
G. Dust and wash all plumbing and electrical fixtures.

(End of Section)

SECTION 01720 -- Project Record Documents

1.01 RELATED WORK SPECIFIED ELSEWHERE:

A. Shop Drawings, Product Data and Samples----------Section 01340.
B. Operations and Maintenance Data----------Section 01740.

1.02 MAINTENANCE OF DOCUMENTS:

A. Maintain at job site, one copy of the following: Contract Drawings, Specifications Manual, STANDARD SPECIFICATIONS FOR PUBLIC WORK CONSTRUCTION - NORTH CENTRAL TEXAS, THE CITY OF LEWISVILLE GENERAL DESIGN STANDARDS, Latest Edition, Addenda, reviewed shop drawings, Change Orders, other modifications to Contract and field test reports.
B. Store documents in temporary field office, apart from other documents used for construction.
C. Provide necessary files and racks for storage of documents.
D. Do not use record documents for construction purposes.
E. Make documents available at all times for inspection by Architect and Owner.

1.03 RECORDING:

A. Label each document "PROJECT RECORD" in one inch (1”) high printed letters.
B. Keep record documents current.
C. Do not permanently conceal any work until required information has been recorded.
D. Contract Drawings: Legibly mark to record actual construction:
   1. Depths of various elements of foundation and drilled piers in relation to Finish Grade.
   2. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
   3. Location of internal utilities concealed in construction referenced to visible and accessible features of structure, if significantly different than that shown on Drawings.
   4. Field changes to dimension and details.
   5. Changes made by Change Order or Field Order.
   6. Details not on original Contract Drawings.
E. Specifications and Addenda: Legibly mark-up each section to record:
   1. Manufacturer, trade name, catalog number of each product and item of equipment actually installed.
   2. Changes made by Change Order or Supplemental Instructions.
   3. Other matters not originally specified.

1.04 SUBCONTRACTORS AND SUPPLIERS LIST:

Provide a complete list of names, addresses and telephone numbers of all subcontractors and suppliers employed on the project.

1.05 AS-BUILT PLANS:

Upon completion of construction, but prior to final acceptance, the information contained in the project record documents shall be transferred to reproducible formats. Adjustments to plan elements shall be redrafted to reflect construction changes, construction relocations shall be re-dimensioned and the installed locations of items not visible on the surface shall be dimensioned from permanent surface features such as retaining walls, light posts, building facades, etc. As-builts of the plans comprising the construction documents shall be made in Adobe Acrobat PDF format and on mylar sepias. Changes shall be clouded or denoted in another appropriate manner to ensure that they are easily

recognizable. A copy (in both formats) of the As-Built drawings shall be submitted to the Architect for review and approval. After approval of the As-Built drawings the Contractor shall submit the PDF file and a mylar original, as well as, three (3) complete sets of the As-Built drawings to the Architect for distribution to the Owner.

1.06 SUBMITTAL:

A. At completion of project, deliver record documents to Architect.
B. Accompany each submittal with transmittal letter in duplicate, containing the following: date, project title and number, Contractor's name and address, title and number of each record document, certification in writing that each document as submitted is complete and accurate and reflects the actual condition at the building/site, signature of Contractor or his authorized representative.

(End of Section)

SECTION 01730 -- Trench Safety

Trench Safety System

The work performed under this section of the specifications consists of providing trench safety systems consisting of shoring, sheeting, trench shield, and/or laid back slopes to meet the trench safety requirements of the Occupational Safety and Health Administration (O.S.H.A.), as required for this project and specified herein.

Trench safety systems shall be provided by the Contractor as provided in Subpart P - Excavation, Trenching and Shoring, Part 1926 of the Code of Federal Regulations, which describes safety and health regulations as administered by the U.S. Department of Labor Occupational Safety and Health Administration (O.S.H.A.). The standards specified by the O.S.H.A. Regulations shall be the minimum allowed on this project. It shall be the responsibility of the Contractor to design and install adequate trench safety systems for all trenches excavated on this project.

Before beginning construction, the Contractor shall furnish to the Owner for inclusion in the Contract Documents, a Trench Safety Plan for the project. The trench safety plan must be prepared and sealed by a qualified Professional Engineer registered in the State of Texas. In addition, all trench safety systems utilized in this project must be designed by a Professional Engineer registered in the State of Texas. The Contractor shall be totally responsible for the safety of all persons involved in the construction of this project.

Any core borings and soil data furnished by the Owner are for the convenience of the Contractor. The Contractor shall be responsible for any additional soil or geotechnical information required. The Contractor shall be responsible for properly designed trench safety systems to be utilized for any type of subsurface condition found on this project. The furnishing of soil information by the Owner in no way relieves the Contractor of this obligation.

If no core borings or soil data are furnished by the Owner, it shall be the Contractor's responsibility to obtain whatever geotechnical information required for preparation of trench safety systems.

Inspections of the trench and trench safety systems required of the Contractor may be made by the O.S.H.A.

The standard detail plans for Sheeting, Trench Shield, and Trench Jacks as shown in the O.S.H.A. Regulations previously referenced.

Payment for Trench and Safety Systems shall be made per lump sum as provided in the Bid Proposal. The payment shall be full compensation for all planning, engineering, materials, equipment, fabrications, installation, recovery and all incidental work required. All excavation and backfill, in addition to that specified elsewhere in these specifications, shall be considered subsidiary to this bid item.

(End of Section)

SECTION 01740 -- Operation and Maintenance Data

PART 1 - GENERAL

1.01 PRIOR TO FINAL PAYMENT: The responsible Prime Contractors shall provide maintenance information and operations instructions for equipment and systems provided under their Contracts. (For jobs that include all work under the General Contract, the responsible subcontractors, under the coordination of the General Contractor, shall provide this information.)

1.02 OPERATION MANUALS: Prepare operating and maintenance instructions for all equipment, particularly mechanical and electrical, that will require any adjustment, servicing, or attention for its proper operation. These instructions shall set forth all of the information necessary for Owner to operate and make full and efficient use of equipment, and perform such maintenance and servicing as would ordinarily be done by Owner or his personnel. They shall be written in simple, non-technical language when possible, with sufficient diagrams and explanation where necessary to be readily understandable by average layman. Possible hazards shall be particularly pointed out with instructions cautioning against mistakes in operation that might result in damage or danger to equipment, building or personnel.

1.03 APPROVAL: One copy of instructions shall be submitted to Architect for review and approval, which shall be returned to Contractor approved or with instructions for changes. Upon approval by Architect, the Contractor shall furnish three copies of instructions covering all equipment to Architect, who will forward 2 copies to Owner for his information and use.

1.04 OPERATION MANUAL SERVICE INDEX: Append to manual the name, address, and telephone number of Contractors and subcontractors; and for mechanical items, provide the name, address and telephone number of companies servicing installed equipment on a 24-hour basis.

1.05 OPERATION INSTRUCTION: After submission of the above mentioned written instructions, Contractor shall furnish competent operation engineer or engineers at such time or times as directed by Architect to meet with Owner or his representative, to fully explain instructions and to demonstrate and fully familiarize Owner or his representative with all of equipment and all phases of its operation and maintenance. The amount of time to be devoted to instruction shall be reasonable and consistent with the size of the installation and the complexity thereof. Instructions shall be adequate to the extent that the Owner's personnel may proceed with normal operations in a safe and efficient manner.

1.06 ADDITIONAL INFORMATION: In addition to the above mentioned instructions, Contractor shall furnish to Architect 1 copy of manufacturer's literature for each item of mechanical and electrical equipment installed in job. Notation shall be written on literature indicating how particular item was used and its location. This information and literature will be forwarded to Owner by Architect to aid in future servicing of equipment and ordering replacement item or parts, and it shall be in sufficient detail to satisfactorily serve this purpose.

(End of Section)

SECTION 01750 -- Storm Water Pollution Prevention Plan

The Texas Pollutant Discharge Elimination System (TPDES) program implements the Federal National Pollutant Discharge Elimination System (NPDES) program in the State of Texas. With the implementation of TPDES General Permit No. TXR 150000 the Texas Commission on Environmental Quality (TCEQ) became the permitting authority and administrator of the Texas Pollutant Discharge Elimination System (TPDES). The General Permit to Discharge under the Texas Pollutant Discharge Elimination System under Provisions of Section 402 of the Clean Water Act and Chapter 26 of the Texas Water Code with an effective date of March 5, 2013 supersedes and replaces TPDES General Permit No. TXR150000, issued March 5, 2008. A copy of the Construction General Permit – TPDES General Permit TXR 150000 with an effective date of March 5, 2013 has been included in this section for reference.

CONTRACTOR RESPONSIBILITIES

A. The General Contractor is responsible for retaining and paying an engineer licensed in the State of Texas to prepare the required SWPPP plan(s) and document(s).

B. The Contractor will be responsible for complying with all aspects of the Construction General Permit - TPDES General Permit No. TXR150000, issued March 5, 2013.

C. A Notice of Intent (NOI) form must be completed by the Contractor's Operator. This NOI must be submitted (postmarked) a minimum of two days before the commencement of construction.

D. Immediately prior to final acceptance of the project, the Contractor's operator shall complete and submit a Notice of Termination (NOT) form.

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Texas Commission on Environmental Quality

P.O. Box 13087, Austin, Texas 78711-3087

GENERAL PERMIT TO DISCHARGE UNDER THE

TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM

under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

This permit supersedes and replaces
TPDES General Permit No. TXR150000, issued March 5, 2008

Construction sites that discharge stormwater associated with construction activity

located in the state of Texas

may discharge to surface water in the state

only according to monitoring requirements and other conditions set forth in this general permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ or Commission), the laws of the State of Texas, and other orders of the Commission of the TCEQ. The issuance of this general permit does not grant to the permittee the right to use private or public property for conveyance of stormwater and certain non-stormwater discharges along the discharge route. This includes property belonging to but not limited to any individual, partnership, corporation or other entity. Neither does this general permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This general permit and the authorization contained herein shall expire at midnight, five years from the permit effective date.

EFFECTIVE DATE: March 5, 2013

ISSUED DATE: FEB 19 2013

Bryan W. Shaw

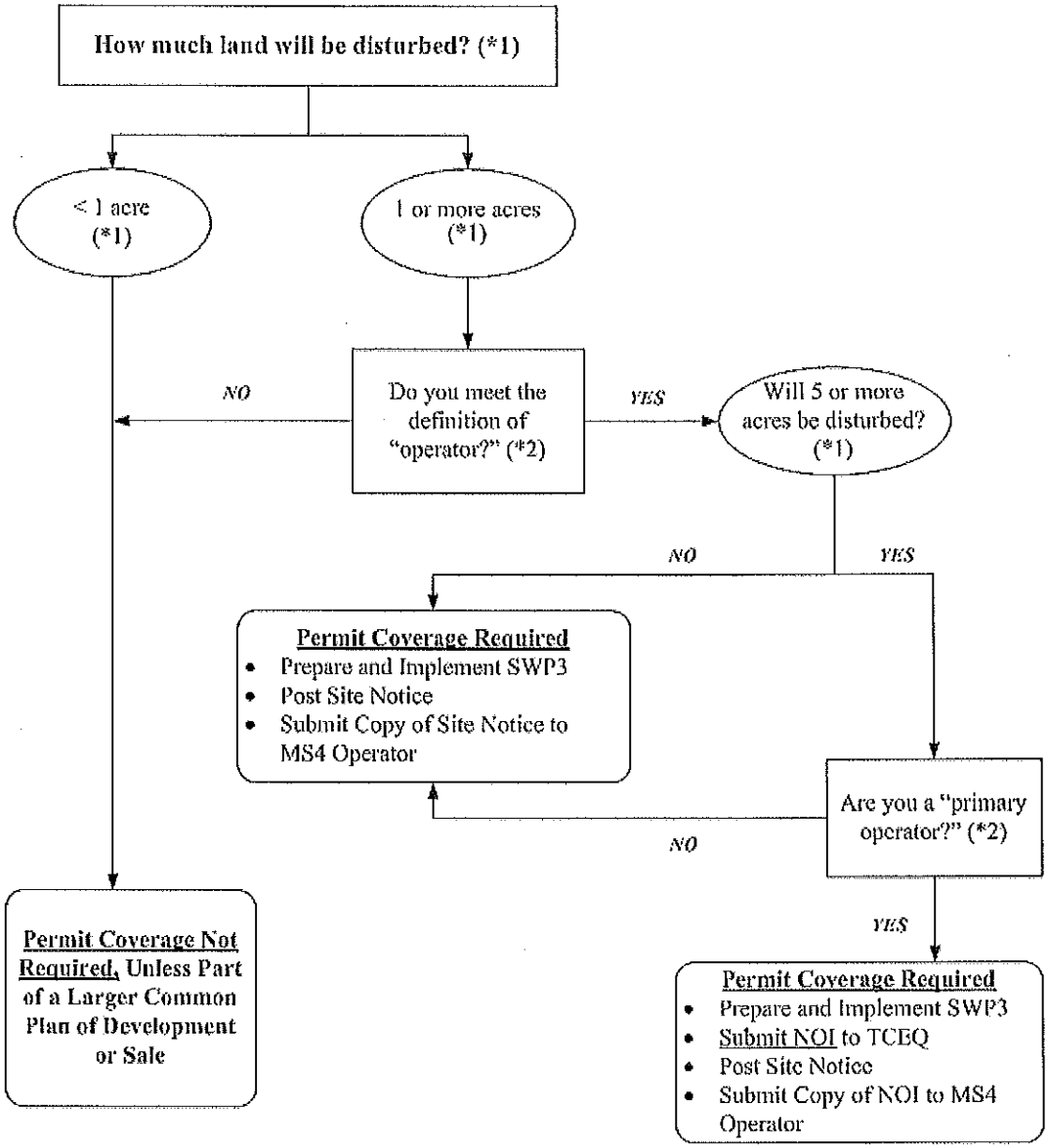
For the Commission

TPDES GENERAL PERMIT NUMBER TXR150000 RELATING TO STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES

Table of Contents

Part I. Flow Chart and Definitions

Section A. Flow Chart to Determine Whether Coverage is Required



*(*1) To determine the size of the construction project, use the size of the entire area to be disturbed, and include the size of the larger common plan of development or sale, if the project is part of a larger project (refer to Part I.B., "Definitions," for an explanation of "common plan of development or sale").*

*(*2) Refer to the definitions for "operator," "primary operator," and "secondary operator" in Part I., Section B. of this permit.*

Section B. Definitions

Arid Areas - Areas with an average annual rainfall of 0 to 10 inches.

Best Management Practices (BMPs) - Schedules of activities, prohibitions of practices, maintenance procedures, structural controls, local ordinances, and other management practices to prevent or reduce the discharge of pollutants. BMPs also include treatment requirements, operating procedures, and practices to control construction site runoff, spills or leaks, waste disposal, or drainage from raw material storage areas.

Commencement of Construction - The initial disturbance of soils associated with clearing, grading, or excavation activities, as well as other construction-related activities (e.g., stockpiling of fill material, demolition).

Common Plan of Development - A construction activity that is completed in separate stages, separate phases, or in combination with other construction activities. A common plan of development (also known as a "common plan of development or sale") is identified by the documentation for the construction project that identifies the scope of the project, and may include plats, blueprints, marketing plans, contracts, building permits, a public notice or hearing, zoning requests, or other similar documentation and activities. A common plan of development does not necessarily include all construction projects within the jurisdiction of a public entity (e.g., a city or university). Construction of roads or buildings in different parts of the jurisdiction would be considered separate "common plans," with only the interconnected parts of a project being considered part of a "common plan" (e.g., a building and its associated parking lot and driveways, airport runway and associated taxiways, a building complex, etc.). Where discrete construction projects occur within a larger common plan of development or sale but are located ¼ mile or more apart, and the area between the projects is not being disturbed, each individual project can be treated as a separate plan of development or sale, provided that any interconnecting road, pipeline or utility project that is part of the same "common plan" is not included in the area to be disturbed.

Construction Activity - Includes soil disturbance activities, including clearing, grading, and excavating; and does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (e.g., the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities). Regulated construction activity is defined in terms of small and large construction activity.

Dewatering – The act of draining rainwater or groundwater from building foundations, vaults, and trenches.

Discharge – For the purposes of this permit, the drainage, release, or disposal of pollutants in stormwater and certain non-stormwater from areas where soil disturbing activities (e.g., clearing, grading, excavation, stockpiling of fill material, and demolition), construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck wash out, fueling), or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants) are located.

Drought-Stricken Area – For the purposes of this permit, an area in which the National Oceanic and Atmospheric Administration's U.S. Seasonal Drought Outlook indicates for the period during which the construction will occur that any of the following conditions are likely: (1) "Drought to persist or intensify", (2) "Drought ongoing, some improvement", (3) "Drought likely to improve, impacts ease", or (4) "Drought development likely". See http://www.cpc.ncep.noaa.gov/products/expert_assessment/seasonal_drought.html.

Edwards Aquifer - As defined under Texas Administrative Code (TAC) § 213.3 of this title (relating to the Edwards Aquifer), that portion of an arcuate belt of porous, water-bearing, predominantly carbonate rocks known as the Edwards and Associated Limestones in the Balcones Fault Zone trending from west to east to northeast in Kinney, Uvalde, Medina, Bexar, Comal, Hays, Travis, and Williamson Counties; and composed of the Salmon Peak

Limestone, McKnight Formation, West Nueces Formation, Devil's River Limestone, Person Formation, Kainer Formation, Edwards Formation, and Georgetown Formation. The permeable aquifer units generally overlie the less-permeable Glen Rose Formation to the south, overlie the less-permeable Comanche Peak and Walnut Formations north of the Colorado River, and underlie the less-permeable Del Rio Clay regionally.

Edwards Aquifer Recharge Zone - Generally, that area where the stratigraphic units constituting the Edwards Aquifer crop out, including the outcrops of other geologic formations in proximity to the Edwards Aquifer, where caves, sinkholes, faults, fractures, or other permeable features would create a potential for recharge of surface waters into the Edwards Aquifer. The recharge zone is identified as that area designated as such on official maps located in the offices of the Texas Commission on Environmental Quality (TCEQ) and the appropriate regional office. The Edwards Aquifer Map Viewer, located at http://www.tceq.texas.gov/compliance/field_ops/eapp/mapdisclaimer.html, can be used to determine where the recharge zone is located.

Edwards Aquifer Contributing Zone - The area or watershed where runoff from precipitation flows downgradient to the recharge zone of the Edwards Aquifer. The contributing zone is located upstream (upgradient) and generally north and northwest of the recharge zone for the following counties: all areas within Kinney County, except the area within the watershed draining to Segment No. 2304 of the Rio Grande Basin; all areas within Uvalde, Medina, Bexar, and Comal Counties; all areas within Hays and Travis Counties, except the area within the watersheds draining to the Colorado River above a point 1.3 miles upstream from Tom Miller Dam, Lake Austin at the confluence of Barrow Brook Cove, Segment No. 1403 of the Colorado River Basin; and all areas within Williamson County, except the area within the watersheds draining to the Lampasas River above the dam at Stillhouse Hollow reservoir, Segment No. 1216 of the Brazos River Basin. The contributing zone is illustrated on the Edwards Aquifer map viewer at http://www.tceq.texas.gov/compliance/field_ops/eapp/mapdisclaimer.html.

Effluent Limitations Guideline (ELG) – Defined in 40 Code of Federal Regulations (CFR) § 122.2 as a regulation published by the Administrator under § 304(b) of the Clean Water Act (CWA) to adopt or revise effluent limitations.

Facility or Activity – For the purpose of this permit, a construction site or construction support activity that is regulated under this general permit, including all contiguous land and fixtures (for example, ponds and materials stockpiles), structures, or appurtances used at a construction site or industrial site described by this general permit.

Final Stabilization - A construction site status where any of the following conditions are met:

A. All soil disturbing activities at the site have been completed and a uniform (that is, evenly distributed, without large bare areas) perennial vegetative cover with a density of at least 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

B. For individual lots in a residential construction site by either:

   (1) the homebuilder completing final stabilization as specified in condition (a) above; or

   (2) the homebuilder establishing temporary stabilization for an individual lot prior to the time of transfer of the ownership of the home to the buyer and after informing the homeowner of the need for, and benefits of, final stabilization. If temporary stabilization is not feasible, then the homebuilder may fulfill this requirement by retaining perimeter controls or BMPs, and informing the homeowner of the need for removal of temporary controls and the establishment of final stabilization.

Fullfillment of this requirement must be documented in the homebuilder's stormwater pollution prevention plan (SWP3).

C. For construction activities on land used for agricultural purposes (such as pipelines across crop or range land), final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to surface water and areas that are not being returned to their preconstruction agricultural use must meet the final stabilization conditions of condition (a) above.

D. In arid, semi-arid, and drought-stricken areas only, all soil disturbing activities at the site have been completed and both of the following criteria have been met:

(1) Temporary erosion control measures (for example, degradable rolled erosion control product) are selected, designed, and installed along with an appropriate seed base to provide erosion control for at least three years without active maintenance by the operator, and

(2) The temporary erosion control measures are selected, designed, and installed to achieve 70% of the native background vegetative coverage within three years.

Hyperchlorination of Waterlines – Treatment of potable water lines or tanks with chlorine for disinfection purposes, typically following repair or partial replacement of the waterline or tank, and subsequently flushing the contents.

Impaired Water - A surface water body that is identified on the latest approved CWA §303(d) List as not meeting applicable state water quality standards. Impaired waters include waters with approved or established total maximum daily loads (TMDLs), and those where a TMDL has been proposed by TCEQ but has not yet been approved or established.

Indian Country Land – (from 40 CFR §122.2) (1) all land within the limits of any Indian reservation under the jurisdiction of the United States government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation; (2) all dependent Indian communities with the borders of the United States whether within the originally or subsequently acquired territory thereof, and whether within or without the limits of a state; and (3) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.

Indian Tribe - (from 40 CFR §122.2) any Indian Tribe, band, group, or community recognized by the Secretary of the Interior and exercising governmental authority over a Federal Indian Reservation.

Large Construction Activity - Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than five (5) acres of land. Large construction activity also includes the disturbance of less than five (5) acres of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than five (5) acres of land. Large construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (for example, the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities.)

Linear Project – Includes the construction of roads, bridges, conduits, substructures, pipelines, sewer lines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment and associated ancillary facilities in a long, narrow area.

Minimize - To reduce or eliminate to the extent achievable using stormwater controls that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer System (MS4) - A separate storm sewer system owned or operated by the United States, a state, city, town, county, district, association, or other public body (created by or pursuant to state law) having jurisdiction over the disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, flood control or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, that discharges to surface water in the state.

Notice of Change (NOC) – Written notification to the executive director from a discharger authorized under this permit, providing changes to information that was previously provided to the agency in a notice of intent form.

Notice of Intent (NOI) - A written submission to the executive director from an applicant requesting coverage under this general permit.

Notice of Termination (NOT) - A written submission to the executive director from a discharger authorized under a general permit requesting termination of coverage.

Operator - The person or persons associated with a large or small construction activity that is either a primary or secondary operator as defined below:

Primary Operator – the person or persons associated with a large or small construction activity that meets either of the following two criteria:

(a) the person or persons have on-site operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or

(b) the person or persons have day-to-day operational control of those activities at a construction site that are necessary to ensure compliance with a Storm Water Pollution Prevention Plan (SWP3) for the site or other permit conditions (for example, they are authorized to direct workers at a site to carry out activities required by the SWP3 or comply with other permit conditions).

Secondary Operator – The person or entity, often the property owner, whose operational control is limited to:

(a) the employment of other operators, such as a general contractor, to perform or supervise construction activities; or

(b) the ability to approve or disapprove changes to construction plans and specifications, but who does not have day-to-day on-site operational control over construction activities at the site.

Secondary operators must either prepare their own SWP3 or participate in a shared SWP3 that covers the areas of the construction site where they have control over the plans and specifications.

If there is not a primary operator at the construction site, then the secondary operator is defined as the primary operator and must comply with the requirements for primary operators.

Outfall - For the purpose of this permit, a point source at the point where stormwater runoff associated with construction activity discharges to surface water in the state and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels, or other conveyances that connect segments of the same stream or other water of the U.S. and are used to convey waters of the U.S.

Permittee - An operator authorized under this general permit. The authorization may be gained through submission of a notice of intent, by waiver, or by meeting the requirements for automatic coverage to discharge stormwater runoff and certain non-stormwater discharges.

Point Source – (from 40 CFR §122.2) Any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are, or may be, discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

Pollutant - Dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, filter backwash, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into any surface water in the state. The term "pollutant" does not include tail water or runoff water from irrigation or rainwater runoff from cultivated or uncultivated rangeland, pastureland, and farmland. For the purpose of this permit, the term "pollutant" includes sediment.

Pollution - (from Texas Water Code (TWC) §26.001(14)) The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any surface water in the state that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property or to public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.

Rainfall Erosivity Factor (R factor) - the total annual erosive potential that is due to climatic effects, and is part of the Revised Universal Soil Loss Equation (RUSLE).

Receiving Water - A "Water of the United States" as defined in 40 CFR §122.2 into which the regulated stormwater discharges.

Semiarid Areas - areas with an average annual rainfall of 10 to 20 inches

Separate Storm Sewer System - A conveyance or system of conveyances (including roads with drainage systems, streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains), designed or used for collecting or conveying stormwater; that is not a combined sewer, and that is not part of a publicly owned treatment works (POTW).

Small Construction Activity - Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than one (1) acre and less than five (5) acres of land. Small construction activity also includes the disturbance of less than one (1) acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one (1) and less than five (5) acres of land. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (for example, the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities.)

Steep Slopes – Where a state, Tribe, local government, or industry technical manual (e.g. stormwater BMP manual) has defined what is to be considered a "steep slope", this permit's definition automatically adopts that definition. Where no such definition exists, steep slopes are automatically defined as those that are 15 percent or greater in grade.

Stormwater (or Stormwater Runoff) - Rainfall runoff, snow melt runoff, and surface runoff and drainage.

Stormwater Associated with Construction Activity - Stormwater runoff from a construction activity where soil disturbing activities (including clearing, grading, excavating) result in the disturbance of one (1) or more acres of total land area, or are part of a larger common plan of development or sale that will result in disturbance of one (1) or more acres of total land area.

Structural Control (or Practice) - A pollution prevention practice that requires the construction of a device, or the use of a device, to reduce or prevent pollution in stormwater

runoff. Structural controls and practices may include but are not limited to: silt fences, earthen dikes, drainage swales, sediment traps, check dams, subsurface drains, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins.

Surface Water in the State - Lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, wetlands, marshes, inlets, canals, the Gulf of Mexico inside the territorial limits of the state (from the mean high water mark (MHWM) out 10.36 miles into the Gulf), and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, navigable or nonnavigable, and including the beds and banks of all water-courses and bodies of surface water, that are wholly or partially inside or bordering the state or subject to the jurisdiction of the state; except that waters in treatment systems which are authorized by state or federal law, regulation, or permit, and which are created for the purpose of waste treatment are not considered to be water in the state.

Temporary Stabilization - A condition where exposed soils or disturbed areas are provided a protective cover or other structural control to prevent the migration of pollutants. Temporary stabilization may include temporary seeding, geotextiles, mulches, and other techniques to reduce or eliminate erosion until either permanent stabilization can be achieved or until further construction activities take place.

Total Maximum Daily Load (TMDL) - The total amount of a pollutant that a water body can assimilate and still meet the Texas Surface Water Quality Standards.

Turbidity – A condition of water quality characterized by the presence of suspended solids and/or organic material.

Waters of the United States - (from 40 CFR §122.2) Waters of the United States or waters of the U.S. means:

(a) all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(b) all interstate waters, including interstate wetlands;

(c) all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds that the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

(1) which are or could be used by interstate or foreign travelers for recreational or other purposes;

(2) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(3) which are used or could be used for industrial purposes by industries in interstate commerce;

(d) all impoundments of waters otherwise defined as waters of the United States under this definition;

(e) tributaries of waters identified in paragraphs (a) through (d) of this definition;

(f) the territorial sea; and

(g) wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR §423.11(m) which also meet the criteria of this definition) are not waters of the U.S. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the U.S. (such as

disposal area in wetlands) nor resulted from the impoundment of waters of the U.S. Waters of the U.S. do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with EPA.

Part II. Permit Applicability and Coverage

Section A. Discharges Eligible for Authorization

1. Stormwater Associated with Construction Activity

Discharges of stormwater runoff from small and large construction activities may be authorized under this general permit.

2. Discharges of Stormwater Associated with Construction Support Activities

Examples of construction support activities include, but are not limited to, concrete batch plants, rock crushers, asphalt batch plants, equipment staging areas, material storage yards, material borrow areas, and excavated material disposal areas. Construction support activities authorized under this general permit are not commercial operations, and do not serve multiple unrelated construction projects. Discharges of stormwater runoff from construction support activities may be authorized under this general permit, provided that the following conditions are met:

(a) the activities are located within one (1) mile from the boundary of the permitted construction site and directly support the construction activity;

(b) an SWP3 is developed for the permitted construction site according to the provisions of this general permit, and includes appropriate controls and measures to reduce erosion and discharge of pollutants in stormwater runoff from the construction support activities; and

(c) the construction support activities either do not operate beyond the completion date of the construction activity or, at the time that they do, are authorized under separate Texas Pollutant Discharge Elimination System (TPDES) authorization. Separate TPDES authorization may include the TPDES Multi Sector General Permit (MSGP), TXR050000 (related to stormwater discharges associated with industrial activity), separate authorization under this general permit if applicable, coverage under an alternative general permit if available, or authorization under an individual water quality permit.

3. Non-Stormwater Discharges

The following non-stormwater discharges from sites authorized under this general permit are also eligible for authorization under this general permit:

(a) discharges from fire fighting activities (fire fighting activities do not include washing of trucks, run-off water from training activities, test water from fire suppression systems, or similar activities);

(b) uncontaminated fire hydrant flushings (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life), which include flushings from systems that utilize potable water, surface water, or groundwater that does not contain additional pollutants (uncontaminated fire hydrant flushings do not include systems utilizing reclaimed wastewater as a source water);

(c) water from the routine external washing of vehicles, the external portion of buildings or structures, and pavement, where detergents and soaps are not used, where spills or leaks of toxic or hazardous materials have not occurred (unless spilled materials

have been removed; and if local state, or federal regulations are applicable, the materials are removed according to those regulations), and where the purpose is to remove mud, dirt, or dust;

(d) uncontaminated water used to control dust;

(e) potable water sources, including waterline flushings, but excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life;

(f) uncontaminated air conditioning condensate;

(g) uncontaminated ground water or spring water, including foundation or footing drains where flows are not contaminated with industrial materials such as solvents; and

(h) lawn watering and similar irrigation drainage.

4. Other Permitted Discharges

Any discharge authorized under a separate National Pollutant Discharge Elimination System (NPDES), TPDES, or TCEQ permit may be combined with discharges authorized by this general permit, provided those discharges comply with the associated permit.

Section B. Concrete Truck Wash Out

The wash out of concrete trucks at regulated construction sites must be performed in accordance with the requirements of Part V of this general permit.

Section C. Limitations on Permit Coverage

1. Post Construction Discharges

Discharges that occur after construction activities have been completed, and after the construction site and any supporting activity site have undergone final stabilization, are not eligible for coverage under this general permit. Discharges originating from the sites are not authorized under this general permit following the submission of the notice of termination (NOT) or removal of the appropriate site notice, as applicable, for the regulated construction activity.

2. Prohibition of Non-Stormwater Discharges

Except as otherwise provided in Part II.A. of this general permit, only discharges that are composed entirely of stormwater associated with construction activity may be authorized under this general permit.

3. Compliance With Water Quality Standards

Discharges to surface water in the state that would cause, have the reasonable potential to cause, or contribute to a violation of water quality standards or that would fail to protect and maintain existing designated uses are not eligible for coverage under this general permit. The executive director may require an application for an individual permit or alternative general permit (see Parts II.H.2. and 3.) to authorize discharges to surface water in the state if the executive director determines that any activity will cause, has the reasonable potential to cause, or contribute to a violation of water quality standards or is found to cause, has the reasonable potential to cause, or contribute to, the impairment of a designated use. The executive director may also require an application for an individual permit considering factors described in Part II.H.2. of this general permit.

4. Impaired Receiving Waters and Total Maximum Daily Load (TMDL) Requirements

New sources or new discharges of the pollutants of concern to impaired waters are not authorized by this permit unless otherwise allowable under 30 TAC Chapter 305 and applicable state law. Impaired waters are those that do not meet applicable water quality standards and are listed on the EPA approved CWA §303(d) List. Pollutants of concern are those for which the water body is listed as impaired.

Discharges of the pollutants of concern to impaired water bodies for which there is a TMDL are not eligible for this general permit unless they are consistent with the approved TMDL. Permittees must incorporate the conditions and requirements applicable to their discharges into their SWP3, in order to be eligible for coverage under this general permit. For consistency with the construction stormwater-related items in an approved TMDL, the SWP3 must be consistent with any applicable condition, goal, or requirement in the TMDL, TMDL Implementation Plan (I-Plan), or as otherwise directed by the executive director.

5. Discharges to the Edwards Aquifer Recharge or Contributing Zone

Discharges cannot be authorized by this general permit where prohibited by 30 TAC Chapter 213 (relating to Edwards Aquifer). In addition, commencement of construction (i.e., the initial disturbance of soils associated with clearing, grading, or excavating activities, as well as other construction-related activities such as stockpiling of fill material and demolition) at a site regulated under 30 TAC Chapter 213, may not begin until the appropriate Edwards Aquifer Protection Plan (EAPP) has been approved by the TCEQ's Edwards Aquifer Protection Program.

(a) For new discharges located within the Edwards Aquifer Recharge Zone, or within that area upstream from the recharge zone and defined as the Contributing Zone (CZ), operators must meet all applicable requirements of, and operate according to, 30 TAC Chapter 213 (Edwards Aquifer Rule) in addition to the provisions and requirements of this general permit.

(b) For existing discharges located within the Edwards Aquifer Recharge Zone, the requirements of the agency-approved Water Pollution Abatement Plan (WPAP) under the Edwards Aquifer Rule is in addition to the requirements of this general permit. BMPs and maintenance schedules for structural stormwater controls, for example, may be required as a provision of the rule. All applicable requirements of the Edwards Aquifer Rule for reductions of suspended solids in stormwater runoff are in addition to the requirements in this general permit for this pollutant.

6. Discharges to Specific Watersheds and Water Quality Areas

Discharges otherwise eligible for coverage cannot be authorized by this general permit where prohibited by 30 TAC Chapter 311 (relating to Watershed Protection) for water quality areas and watersheds.

7. Protection of Streams and Watersheds by Other Governmental Entities

This general permit does not limit the authority or ability of federal, other state, or local governmental entities from placing additional or more stringent requirements on construction activities or discharges from construction activities. For example, this permit does not limit the authority of a home-rule municipality provided by Texas Local Government Code §401.002.

8. Indian Country Lands

Stormwater runoff from construction activities occurring on Indian Country lands are not under the authority of the TCEQ and are not eligible for coverage under this general permit. If discharges of stormwater require authorization under federal NPDES

regulations, authority for these discharges must be obtained from the U.S. Environmental Protection Agency (EPA).

9. Oil and Gas Production

Stormwater runoff from construction activities associated with the exploration, development, or production of oil or gas or geothermal resources, including transportation of crude oil or natural gas by pipeline, are not under the authority of the TCEQ and are not eligible for coverage under this general permit. If discharges of stormwater require authorization under federal NPDES regulations, authority for these discharges must be obtained from the EPA.

10. Stormwater Discharges from Agricultural Activities

Stormwater discharges from agricultural activities that are not point source discharges of stormwater are not subject to TPDES permit requirements. These activities may include clearing and cultivating ground for crops, construction of fences to contain livestock, construction of stock ponds, and other similar agricultural activities. Discharges of stormwater runoff associated with the construction of facilities that are subject to TPDES regulations, such as the construction of concentrated animal feeding operations, would be point sources regulated under this general permit.

11. Endangered Species Act

Discharges that would adversely affect a listed endangered or threatened aquatic or aquatic-dependent species or its critical habitat are not authorized by this permit, unless the requirements of the Endangered Species Act are satisfied. Federal requirements related to endangered species apply to all TPDES permitted discharges and site-specific controls may be required to ensure that protection of endangered or threatened species is achieved. If a permittee has concerns over potential impacts to listed species, the permittee may contact TCEQ for additional information.

12. Other

Nothing in Part II of the general permit is intended to negate any person's ability to assert the force majeure (act of God, war, strike, riot, or other catastrophe) defenses found in 30 TAC §70.7.

Section D. Deadlines for Obtaining Authorization to Discharge

1. Large Construction Activities

(a) New Construction - Discharges from sites where the commencement of construction occurs on or after the effective date of this general permit must be authorized, either under this general permit or a separate TPDES permit, prior to the commencement of those construction activities.

(b) Ongoing Construction - Operators of large construction activities continuing to operate after the effective date of this permit, and authorized under TPDES general permit TXR150000 (effective on March 5, 2008), must submit an NOI to renew authorization or a NOT to terminate coverage under this general permit within 90 days of the effective date of this general permit. During this interim period, as a requirement of this TPDES permit, the operator must continue to meet the conditions and requirements of the previous TPDES permit.

2. Small Construction Activities

(a) New Construction - Discharges from sites where the commencement of construction occurs on or after the effective date of this general permit must be authorized, either

under this general permit or a separate TPDES permit, prior to the commencement of those construction activities.

(b) Ongoing Construction - Discharges from ongoing small construction activities that commenced prior to the effective date of this general permit, and that would not meet the conditions to qualify for termination of this permit as described in Part II.E. of this general permit, must meet the requirements to be authorized, either under this general permit or a separate TPDES permit, within 90 days of the effective date of this general permit. During this interim period, as a requirement of this TPDES permit, the operator must continue to meet the conditions and requirements of the previous TPDES permit.

Section E. Obtaining Authorization to Discharge

1. Automatic Authorization for Small Construction Activities With Low Potential for Erosion:

If all of the following conditions are met, then a small construction activity is determined to occur during periods of low potential for erosion, and a site operator may be automatically authorized under this general permit without being required to develop an SWP3 or submit an NOI:

(a) the construction activity occurs in a county listed in Appendix A;

(b) the construction activity is initiated and completed, including either final or temporary stabilization of all disturbed areas, within the time frame identified in Appendix A for the location of the construction site;

(c) all temporary stabilization is adequately maintained to effectively reduce or prohibit erosion, permanent stabilization activities have been initiated, and a condition of final stabilization is completed no later than 30 days following the end date of the time frame identified in Appendix A for the location of the construction site;

(d) the permittee signs a completed TCEQ construction site notice, including the certification statement;

(e) a signed copy of the construction site notice is posted at the construction site in a location where it is readily available for viewing by the general public, local, state, and federal authorities prior to commencing construction activities, and maintained in that location until completion of the construction activity;

(f) a copy of the signed and certified construction site notice is provided to the operator of any MS4 receiving the discharge at least two days prior to commencement of construction activities;

(g) any supporting concrete batch plant or asphalt batch plant is separately authorized for discharges of stormwater runoff or other non-stormwater discharges under an individual TPDES permit, another TPDES general permit, or under an individual TCEQ permit where stormwater and non-stormwater is disposed of by evaporation or irrigation (discharges are adjacent to water in the state); and

(h) any non-stormwater discharges are either authorized under a separate permit or authorization, or are not considered to be a wastewater.

Part II.G. of this general permit describes how an operator may apply for and obtain a waiver from permitting, for certain small construction activities that occur during a period with a low potential for erosion, where automatic authorization under this section is not available.

2. Automatic Authorization For All Other Small Construction Activities:

Operators of small construction activities not described in Part II.E.1. above may be automatically authorized under this general permit, and operators of these sites shall not be required to submit an NOI, provided that they meet all of the following conditions:

(a) develop a SWP3 according to the provisions of this general permit, that covers either the entire site or all portions of the site for which the applicant is the operator, and implement that plan prior to commencing construction activities;

(b) sign and certify a completed TCEQ small construction site notice, post the notice at the construction site in a location where it is safely and readily available for viewing by the general public, local, state, and federal authorities, prior to commencing construction, and maintain the notice in that location until completion of the construction activity (for linear construction activities, e.g. pipeline or highway, the site notice must be placed in a publicly accessible location near where construction is actively underway; notice for these linear sites may be relocated, as necessary, along the length of the project, and the notice must be safely and readily available for viewing by the general public; local, state, and federal authorities); and

(c) provide a copy of the signed and certified construction site notice to the operator of any municipal separate storm sewer system receiving the discharge prior to commencement of construction activities.

Operators of small construction activities as defined in Part I.B of this general permit shall not submit an NOI for coverage unless otherwise required by the executive director.

As described in Part I (Definitions) of this general permit, large construction activities include those that will disturb less than five (5) acres of land, but that are part of a larger common plan of development or sale that will ultimately disturb five (5) or more acres of land, and must meet the requirements of Part II.E.3. below.

3. Authorization for Large Construction Activities:

Operators of large construction activities that qualify for coverage under this general permit must meet all of the following conditions:

(a) develop a SWP3 according to the provisions of this general permit that covers either the entire site or all portions of the site for which the applicant is the operator, and implement that plan prior to commencing construction activities;

(b) primary operators must submit an NOI, using a form provided by the executive director, at least seven (7) days prior to commencing construction activities, or if utilizing electronic submittal, prior to commencing construction activities. If an additional primary operator is added after the initial NOI is submitted, the new primary operator must submit an NOI at least seven (7) days before assuming operational control, or if utilizing electronic NOI submittal, prior to assuming operational control. If the primary operator changes after the initial NOI is submitted, the new primary operator must submit a paper NOI or an electronic NOI at least ten (10) days before assuming operational control;

(c) all operators of large construction activities must post a site notice in accordance with Part III.D.2. of this permit. The site notice must be located where it is safely and readily available for viewing by the general public, local, state, and federal authorities prior to commencing construction, and must be maintained in that location until completion of the construction activity (for linear construction activities, e.g. pipeline or highway, the site notice must be placed in a publicly accessible location near where construction is actively underway; notice for these linear sites may be relocated, as necessary, along the length of the project, and the notice must be safely and readily available for viewing by the general public; local, state, and federal authorities);

(d) prior to commencing construction activities, all primary operators must (1) provide a copy of the signed NOI to the operator of any MS4 receiving the discharge and to any secondary construction operator, and (2) list in the SWP3 the names and addresses of all MS4 operators receiving a copy;

(e) all persons meeting the definition of "secondary operator" in Part I of this permit are hereby notified that they are regulated under this general permit, but are not required to submit an NOI, provided that a primary operator at the site has submitted an NOI, or is required to submit an NOI, and the secondary operator has provided notification to the operator(s) of the need to obtain coverage (with records of notification available upon request). Any secondary operator notified under this provision may alternatively submit an NOI under this general permit, may seek coverage under an alternative TPDES individual permit, or may seek coverage under an alternative TPDES general permit if available; and

(f) all secondary operators must provide a copy of the signed and certified Secondary Operator construction site notice to the operator of any MS4 receiving the discharge prior to commencement of construction activities.

4. Waivers for Small Construction Activities:

Part II.G. describes how operators of certain small construction activities may obtain a waiver from coverage.

5. Effective Date of Coverage

(a) Operators of small construction activities as described in either Part II.E.1. or II.E.2. above are authorized immediately following compliance with the applicable conditions of Part II.E.1. or II.E.2. Secondary operators of large construction activities as described in Part II.E.3. above are authorized immediately following compliance with the applicable conditions in Part II.E.3. For activities located in areas regulated by 30 TAC Chapter 213, related to the Edwards Aquifer, this authorization to discharge is separate from the requirements of the operator's responsibilities under that rule. Construction may not commence for sites regulated under 30 TAC Chapter 213 until all applicable requirements of that rule are met.

(b) Primary operators of large construction activities as described in Part II.E.3. above are provisionally authorized seven (7) days from the date that a completed NOI is postmarked for delivery to the TCEQ, unless otherwise notified by the executive director. If electronic submission of the NOI is provided, and unless otherwise notified by the executive director, primary operators are authorized immediately following confirmation of receipt of the NOI by the TCEQ. Authorization is non-provisional when the executive director finds the NOI is administratively complete and an authorization number is issued for the activity. For activities located in areas regulated by 30 TAC Chapter 213, related to the Edwards Aquifer, this authorization to discharge is separate from the requirements of the operator's responsibilities under that rule. Construction may not commence for sites regulated under 30 TAC Chapter 213 until all applicable requirements of that rule are met.

(c) Operators are not prohibited from submitting late NOIs or posting late notices to obtain authorization under this general permit. The TCEQ reserves the right to take appropriate enforcement actions for any unpermitted activities that may have occurred between the time construction commenced and authorization was obtained.

6. Notice of Change (NOC)

If relevant information provided in the NOI changes, an NOC must be submitted at least 14 days before the change occurs, if possible. Where 14-day advance notice is not possible, the operator must submit an NOC within 14 days of discovery of the change. If

the operator becomes aware that it failed to submit any relevant facts or submitted incorrect information in an NOI, the correct information must be provided to the executive director in an NOC within 14 days after discovery. The NOC shall be submitted on a form provided by the executive director, or by letter if an NOC form is not available. A copy of the NOC must also be provided to the operator of any MS4 receiving the discharge, and a list must be included in the SWP3 that includes the names and addresses of all MS4 operators receiving a copy.

Information that may be included on an NOC includes, but is not limited to, the following: the description of the construction project, an increase in the number of acres disturbed (for increases of one or more acres), or the operator name. A transfer of operational control from one operator to another, including a transfer of the ownership of a company, may not be included in an NOC.

A transfer of ownership of a company includes changes to the structure of a company, such as changing from a partnership to a corporation or changing corporation types, so that the filing number (or charter number) that is on record with the Texas Secretary of State must be changed.

An NOC is not required for notifying TCEQ of a decrease in the number of acres disturbed. This information must be included in the SWP3 and retained on site.

7. Signatory Requirement for NOI Forms, Notice of Termination (NOT) Forms, NOC Letters, and Construction Site Notices

NOI forms, NOT forms, NOC letters, and Construction Site Notices that require a signature must be signed according to 30 TAC § 305.44 (relating to Signatories for Applications).

8. Contents of the NOI

The NOI form shall require, at a minimum, the following information:

(a) the TPDES CGP authorization number for existing authorizations under this general permit, where the operator submits an NOI to renew coverage within 90 days of the effective date of this general permit;

(b) the name, address, and telephone number of the operator filing the NOI for permit coverage;

(c) the name (or other identifier), address, county, and latitude/longitude of the construction project or site;

(d) the number of acres that will be disturbed by the applicant;

(e) confirmation that the project or site will not be located on Indian Country lands;

(f) confirmation that a SWP3 has been developed in accordance with this general permit, that it will be implemented prior to construction, and that it is compliant with any applicable local sediment and erosion control plans; for multiple operators who prepare a shared SWP3, the confirmation for an operator may be limited to its obligations under the SWP3 provided all obligations are confirmed by at least one operator;

(g) name of the receiving water(s);

(h) the classified segment number for each classified segment that receives discharges from the regulated construction activity (if the discharge is not directly to a classified segment, then the classified segment number of the first classified segment that those discharges reach); and

(i) the name of all surface waters receiving discharges from the regulated construction activity that are on the latest EPA-approved CWA § 303(d) List of impaired waters.

Section F. Terminating Coverage

1. Notice of Termination (NOT) Required

Each operator that has submitted an NOI for authorization under this general permit must apply to terminate that authorization following the conditions described in this section of the general permit. Authorization must be terminated by submitting an NOT on a form supplied by the executive director. Authorization to discharge under this general permit terminates at midnight on the day the NOT is postmarked for delivery to the TCEQ. If electronic submission of the NOT is provided, authorization to discharge under this permit terminates immediately following confirmation of receipt of the NOT by the TCEQ. Compliance with the conditions and requirements of this permit is required until an NOT is submitted.

The NOT must be submitted to TCEQ, and a copy of the NOT provided to the operator of any MS4 receiving the discharge (with a list in the SWP3 of the names and addresses of all MS4 operators receiving a copy), within 30 days after any of the following conditions are met:

(a) final stabilization has been achieved on all portions of the site that are the responsibility of the permittee;

(b) a transfer of operational control has occurred (See Section II.F.4. below); or

(c) the operator has obtained alternative authorization under an individual TPDES permit or alternative TPDES general permit.

2. Minimum Contents of the NOT

The NOT form shall require, at a minimum, the following information:

(a) if authorization was granted following submission of an NOI, the permittee's site-specific TPDES authorization number for the construction site;

(b) an indication of whether the construction activity is completed or if the permittee is simply no longer an operator at the site;

(c) the name, address, and telephone number of the permittee submitting the NOT;

(d) the name (or other identifier), address, county, and location (latitude/longitude) of the construction project or site; and

(e) a signed certification that either all stormwater discharges requiring authorization under this general permit will no longer occur, or that the applicant is no longer the operator of the facility or construction site, and that all temporary structural erosion controls have either been removed, will be removed on a schedule defined in the SWP3, or have been transferred to a new operator if the new operator has applied for permit coverage. Erosion controls that are designed to remain in place for an indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal.

3. Termination of Coverage for Small Construction Sites and for Secondary Operators at Large Construction Sites

Each operator that has obtained automatic authorization and has not been required to submit an NOI must remove the site notice upon meeting any of the conditions listed below, complete the applicable portion of the site notice related to removal of the site notice, and submit a copy of the completed site notice to the operator of any MS4 receiving the discharge (or provide alternative notification as allowed by the MS4 operator, with documentation of such notification included in the SWP3), within 30 days of meeting any of the following conditions:

(a) final stabilization has been achieved on all portions of the site that are the responsibility of the permittee;

(b) a transfer of operational control has occurred (See Section II.F.4. below); or

(c) the operator has obtained alternative authorization under an individual or general TPDES permit.

Authorization to discharge under this general permit terminates immediately upon removal of the applicable site notice. Compliance with the conditions and requirements of this permit is required until the site notice is removed.

4. Transfer of Operational Control

Coverage under this general permit is not transferable. A transfer of operational control includes changes to the structure of a company, such as changing from a partnership to a corporation, or changing to a different corporation type such that a different filing (or charter) number is established with the Texas Secretary of State.

When the primary operator of a large construction activity changes or operational control is transferred, the original operator must submit an NOT within ten (10) days prior to the date that responsibility for operations terminates, and the new operator must submit an NOI at least ten (10) days prior to the transfer of operational control, in accordance with condition (a) or (b) below. A copy of the NOT must be provided to the operator of any MS4 receiving the discharge in accordance with Section II.F.1. above.

Operators of regulated construction activities who are not required to submit an NOI must remove the original site notice, and the new operator must post the required site notice prior to the transfer of operational control, in accordance with condition (a) or (b) below. A copy of the completed site notice must be provided to the operator of any MS4 receiving the discharge, in accordance with Section II.F.3. above.

A transfer of operational control occurs when either of the following criteria is met:

(a) Another operator has assumed control over all areas of the site that have not been finally stabilized; and all silt fences and other temporary erosion controls have either been removed, scheduled for removal as defined in the SWP3, or transferred to a new operator, provided that the permitted operator has attempted to notify the new operator in writing of the requirement to obtain permit coverage. Record of this notification (or attempt at notification) shall be retained by the operator in accordance with Part VI of this permit. Erosion controls that are designed to remain in place for an indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal.

(b) A homebuilder has purchased one or more lots from an operator who obtained coverage under this general permit for a common plan of development or sale. The homebuilder is considered a new operator and shall comply with the requirements listed above, including the development of a SWP3 if necessary. Under these circumstances, the homebuilder is only responsible for compliance with the general permit requirements as they apply to lot(s) it has operational control over, and the original operator remains responsible for common controls or discharges, and must amend its SWP3 to remove the lot(s) transferred to the homebuilder.

Section G. Waivers from Coverage

The executive director may waive the otherwise applicable requirements of this general permit for stormwater discharges from small construction activities under the terms and conditions described in this section.

1. Waiver Applicability and Coverage

Operators of small construction activities may apply for and receive a waiver from the requirements to obtain authorization under this general permit, where all of the following conditions are met. This waiver from coverage does not apply to non-stormwater discharges. The operator must insure that any non-stormwater discharges are either authorized under a separate permit or authorization, or are not considered to be a wastewater.

(a) the calculated rainfall erosivity (R) factor for the entire period of the construction project is less than five (5);

(b) the operator submits to the TCEQ a signed waiver certification form, supplied by the executive director, certifying that the construction activity will commence and be completed within a period when the value of the calculated R factor is less than five (5); and

(c) the waiver certification form is postmarked for delivery to the TCEQ at least seven (7) days before construction activity begins or, if electronic filing is available, then any time following the receipt of written confirmation from TCEQ that a complete electronic application was submitted and acknowledged.

2. Steps to Obtaining a Waiver

The construction site operator may calculate the R factor to request a waiver using the following steps:

(a) Estimate the construction start date and the construction end date. The construction end date is the date that final stabilization will be achieved.

(b) Find the appropriate Erosivity Index (EI) zone in Appendix B of this permit.

(c) Find the EI percentage for the project period by adding the results for each period of the project using the table provided in Appendix D of this permit, in EPA Fact Sheet 2.1, or in USDA Handbook 703, by subtracting the start value from the end value to find the percent EI for the site.

(d) Refer to the Isoerodent Map (Appendix C of this permit) and interpolate the annual isoerodent value for the proposed construction location.

(e) Multiply the percent value obtained in Step (c) above by the annual isoerodent value obtained in Step (d). This is the R factor for the proposed project. If the value is less than 5, then a waiver may be obtained. If the value is five (5) or more, then a waiver may not be obtained, and the operator must obtain coverage under Part II.E.2. of this permit.

Alternatively, the operator may calculate a site-specific R factor utilizing the following online calculator: http://ei.tamu.edu/index.html, or using another available resource.

The waiver certification form is not required to be posted at the small construction site.

3. Effective Date of Waiver

Operators of small construction activities are provisionally waived from the otherwise applicable requirements of this general permit seven (7) days from the date that a completed waiver certification form is postmarked for delivery to TCEQ, or immediately upon receiving confirmation of approval of an electronic submittal, if electronic form submittals are available.

4. Activities Extending Beyond the Waiver Period

If a construction activity extends beyond the approved waiver period due to circumstances beyond the control of the operator, the operator must either:

(a) recalculate the R factor using the original start date and a new projected ending date, and if the R factor is still under five (5), submit a new waiver certification form at least two (2) days before the end of the original waiver period; or

(b) obtain authorization under this general permit according to the requirements delineated in either Part II.E.2. or Part II.E.3. before the end of the approved waiver period.

Section H. Alternative TPDES Permit Coverage

1. Individual Permit Alternative

Any discharge eligible for coverage under this general permit may alternatively be authorized under an individual TPDES permit according to 30 TAC §305 (relating to Consolidated Permits). Applications for individual permit coverage should be submitted at least three hundred and thirty (330) days prior to commencement of construction activities to ensure timely authorization.

2. Individual Permit Required

The executive director may suspend an authorization or deny an NOI in accordance with the procedures set forth in 30 TAC §205 (relating to General Permits for Waste Discharges), including the requirement that the executive director provide written notice to the permittee. The executive director may require an operator of a construction site, otherwise eligible for authorization under this general permit, to apply for an individual TPDES permit in the following circumstances:

(a) the conditions of an approved TMDL or TMDL I-Plan on the receiving water;

(b) the activity being determined to cause a violation of water quality standards or being found to cause, or contribute to, the loss of a designated use of surface water in the state: and

(c) any other consideration defined in 30 TAC Chapter 205 (relating to General Permits for Waste Discharges) including 30 TAC Chapter 205.4(c)(3)(D), which allows the commission to deny authorization under the general permit and require an individual permit if a discharger "has been determined by the executive director to have been out of compliance with any rule, order, or permit of the commission, including non-payment of fees assessed by the executive director."

Additionally, the executive director may cancel, revoke, or suspend authorization to discharge under this general permit based on a finding of historical and significant noncompliance with the provisions of this general permit, relating to 30 TAC §60.3 (Use of Compliance History). Denial of authorization to discharge under this general permit or suspension of a permittee's authorization under this general permit shall be done according to commission rules in 30 TAC Chapter 205 (relating to General Permits for Waste Discharges).

3. Alternative Discharge Authorization

Any discharge eligible for authorization under this general permit may alternatively be authorized under a separate general permit according to 30 TAC Chapter 205 (relating to General Permits for Waste Discharges), if applicable.

Section I. Permit Expiration

1. This general permit is effective for a term not to exceed five (5) years. All active discharge authorizations expire on the date provided on page one (1) of this permit. Following public notice and comment, as provided by 30 TAC §205.3 (relating to

Public Notice, Public Meetings, and Public Comment), the commission may amend, revoke, cancel, or renew this general permit.

2. If the executive director publishes a notice of the intent to renew or amend this general permit before the expiration date, the permit will remain in effect for existing, authorized discharges until the commission takes final action on the permit. Upon issuance of a renewed or amended permit, permittees may be required to submit an NOI within 90 days following the effective date of the renewed or amended permit, unless that permit provides for an alternative method for obtaining authorization.
3. If the commission does not propose to reissue this general permit within 90 days before the expiration date, permittees shall apply for authorization under an individual permit or an alternative general permit. If the application for an individual permit is submitted before the expiration date, authorization under this expiring general permit remains in effect until the issuance or denial of an individual permit. No new NOIs will be accepted nor new authorizations honored under the general permit after the expiration date.

Part III. Stormwater Pollution Prevention Plans (SWP3)

All regulated construction site operators shall prepare an SWP3, prior to submittal of an NOI, to address discharges authorized under Parts II.E.2. and II.E.3. of this general permit that will reach Waters of the U.S., including discharges to MS4s and privately owned separate storm sewer systems that drain to Waters of the U.S., to identify and address potential sources of pollution that are reasonably expected to affect the quality of discharges from the construction site, including off-site material storage areas, overburden and stockpiles of dirt, borrow areas, equipment staging areas, vehicle repair areas, fueling areas, etc., used solely by the permitted project. The SWP3 must describe the implementation of practices that will be used to minimize to the extent practicable the discharge of pollutants in stormwater associated with construction activity and non-stormwater discharges described in Part II.A.3., in compliance with the terms and conditions of this permit.

Individual operators at a site may develop separate SWP3s that cover only their portion of the project, provided reference is made to the other operators at the site. Where there is more than one SWP3 for a site, permittees must coordinate to ensure that BMPs and controls are consistent and do not negate or impair the effectiveness of each other. Regardless of whether a single comprehensive SWP3 is developed or separate SWP3s are developed for each operator, it is the responsibility of each operator to ensure compliance with the terms and conditions of this general permit in the areas of the construction site where that operator has control over construction plans and specifications or day-to-day operations.

Section A. Shared SWP3 Development

For more effective coordination of BMPs and opportunities for cost sharing, a cooperative effort by the different operators at a site is encouraged. Operators must independently obtain authorization, but may work together to prepare and implement a single, comprehensive SWP3 for the entire construction site.

1. The SWP3 must clearly list the name and, for large construction activities, the general permit authorization numbers, for each operator that participates in the shared SWP3. Until the TCEQ responds to receipt of the NOI with a general permit authorization number, the SWP3 must specify the date that the NOI was submitted to TCEQ by each operator. Each operator participating in the shared plan must also sign the SWP3.

2. The SWP3 must clearly indicate which operator is responsible for satisfying each shared requirement of the SWP3. If the responsibility for satisfying a requirement is not described in the plan, then each permittee is entirely responsible for meeting the requirement within the boundaries of the construction site where they perform construction activities. The SWP3 must clearly describe responsibilities for meeting each requirement in shared or common areas.
3. The SWP3 may provide that one operator is responsible for preparation of a SWP3 in compliance with the CGP, and another operator is responsible for implementation of the SWP3 at the project site.

Section B. Responsibilities of Operators

1. Secondary Operators and Primary Operators with Control Over Construction Plans and Specifications

   All secondary operators and primary operators with control over construction plans and specifications shall:

   (a) ensure the project specifications allow or provide that adequate BMPs are developed to meet the requirements of Part III of this general permit;

   (b) ensure that the SWP3 indicates the areas of the project where they have control over project specifications, including the ability to make modifications in specifications;

   (c) ensure that all other operators affected by modifications in project specifications are notified in a timely manner so that those operators may modify their BMP s as necessary to remain compliant with the conditions of this general permit; and

   (d) ensure that the SWP3 for portions of the project where they are operators indicates the name and site-specific TPDES authorization number(s) for operators with the day-to-day operational control over those activities necessary to ensure compliance with the SWP3 and other permit conditions. If the party with day-to-day operational control has not been authorized or has abandoned the site, the person with control over project specifications is considered to be the responsible party until the authority is transferred to another party and the SWP3 is updated.

2. Primary Operators with Day-to-Day Operational Control

Primary operators with day-to-day operational control of those activities at a project that are necessary to ensure compliance with an SWP3 and other permit conditions must ensure that the SWP3 accomplishes the following requirements:

(a) meets the requirements of this general permit for those portions of the project where they are operators;

(b) identifies the parties responsible for implementation of BMPs described in the SWP3;

(c) indicates areas of the project where they have operational control over day-to-day activities; and

(d) includes, for areas where they have operational control over day-to-day activities, the name and site-specific TPDES authorization number of the parties with control over project specifications, including the ability to make modifications in specifications.

Section C. Deadlines for SWP3 Preparation, Implementation, and Compliance

The SWP3 must be prepared prior to obtaining authorization under this general permit, and implemented prior to commencing construction activities that result in soil

disturbance. The SWP3 must be prepared so that it provides for compliance with the terms and conditions of this general permit.

Section D. Plan Review and Making Plans Available

1. The SWP3 must be retained on-site at the construction site or, if the site is inactive or does not have an on-site location to store the plan, a notice must be posted describing the location of the SWP3. The SWP3 must be made readily available at the time of an on-site inspection to: the executive director; a federal, state, or local agency approving sediment and erosion plans, grading plans, or stormwater management plans; local government officials; and the operator of a municipal separate storm sewer receiving discharges from the site. If the SWP3 is retained off-site, then it shall be made available as soon as reasonably possible. In most instances, it is reasonable that the SWP3 shall be made available within 24 hours of the request.
2. A primary operator of a large construction activity must post the TCEQ site notice near the main entrance of the construction site. An operator of a small construction activity seeking authorization under this general permit and a secondary operator of a large construction activity must post the TCEQ site notice required in Part II.E.1., 2., or 3. of this general permit in order to obtain authorization. If the construction project is a linear construction project, such as a pipeline or highway, the notices must be placed in a publicly accessible location near where construction is actively underway. Notices for these linear sites may be relocated, as necessary, along the length of the project. The notices must be readily available for viewing by the general public; local, state, and federal authorities; and contain the following information:
   (a) the site-specific TPDES authorization number for the project if assigned;
   (b) the operator name, contact name, and contact phone number;
   (c) a brief description of the project; and
   (d) the location of the SWP3.
3. This permit does not provide the general public with any right to trespass on a construction site for any reason, including inspection of a site; nor does this permit require that permittees allow members of the general public access to a construction site.

Section E. Revisions and Updates to SWP3s

The permittee must revise or update the SWP3 whenever the following occurs:

1. a change in design, construction, operation, or maintenance that has a significant effect on the discharge of pollutants and that has not been previously addressed in the SWP3;
2. changing site conditions based on updated plans and specifications, new operators, new areas of responsibility, and changes in BMPs; or
3. results of inspections or investigations by site operators, operators of a municipal separate storm sewer system receiving the discharge, authorized TCEQ personnel, or a federal, state or local agency approving sediment and erosion plans indicate the SWP3 is proving ineffective in eliminating or significantly minimizing pollutants in discharges authorized under this general permit.

Section F. Contents of SWP3

The SWP3 must include, at a minimum, the information described in this section and must comply with the construction and development effluent guidelines in Part III, Section G of the general permit.

1. A site or project description, which includes the following information:
   (a) a description of the nature of the construction activity;
   (b) a list of potential pollutants and their sources;
   (c) a description of the intended schedule or sequence of activities that will disturb soils for major portions of the site, including estimated start dates and duration of activities;
   (d) the total number of acres of the entire property and the total number of acres where construction activities will occur, including off-site material storage areas, overburden and stockpiles of dirt, and borrow areas that are authorized under the permittee's NOI;
   (e) data describing the soil or the quality of any discharge from the site;
   (f) a map showing the general location of the site (e.g. a portion of a city or county map);
   (g) a detailed site map (or maps) indicating the following:
      (i) drainage patterns and approximate slopes anticipated after major grading activities;
      (ii) areas where soil disturbance will occur;
      (iii) locations of all controls and buffers, either planned or in place;
      (iv) locations where temporary or permanent stabilization practices are expected to be used;
      (v) locations of construction support activities, including off-site activities, that are authorized under the permittee's NOI, including material, waste, borrow, fill, or equipment or chemical storage areas;
      (vi) surface waters (including wetlands) either at, adjacent, or in close proximity to the site, and also indicating those that are impaired waters;
      (vii) locations where stormwater discharges from the site directly to a surface water body or a municipal separate storm sewer system;
      (viii) vehicle wash areas; and
      (ix) designated points on the site where vehicles will exit onto paved roads (for instance, this applies to construction transition from unstable dirt areas to exterior paved roads).

      Where the amount of information required to be included on the map would result in a single map being difficult to read and interpret, the operator shall develop a series of maps that collectively include the required information.
   (h) the location and description of support activities authorized under the permittee's NOI, including asphalt plants, concrete plants, and other activities providing support to the construction site that is authorized under this general permit;
   (i) the name of receiving waters at or near the site that may be disturbed or that may receive discharges from disturbed areas of the project;
   (j) a copy of this TPDES general permit;
   (k) the NOI and acknowledgement certificate for primary operators of large construction sites, and the site notice for small construction sites and for secondary operators of large construction sites;
   (l) stormwater and allowable non-stormwater discharge locations, including storm drain inlets on site and in the immediate vicinity of the construction site; and

(m) locations of all pollutant-generating activities, such as paving operations; concrete, paint and stucco washout and water disposal; solid waste storage and disposal; and dewatering operations.

2. A description of the BMPs that will be used to minimize pollution in runoff.

The description must identify the general timing or sequence for implementation. At a minimum, the description must include the following components:

(a) General Requirements

(i) Erosion and sediment controls must be designed to retain sediment on-site to the extent practicable with consideration for local topography, soil type, and rainfall.

(ii) Control measures must be properly selected, installed, and maintained according to the manufacturer's or designer's specifications.

(iii) Controls must be developed to minimize the offsite transport of litter, construction debris, and construction materials.

(b) Erosion Control and Stabilization Practices

The SWP3 must include a description of temporary and permanent erosion control and stabilization practices for the site, compliant with the requirements of Part III.G.1 and G.2 of this general permit, including a schedule of when the practices will be implemented. Site plans should ensure that existing vegetation is preserved where it is possible.

(i) Erosion control and stabilization practices may include but are not limited to: establishment of temporary or permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of existing trees and vegetation, slope texturing, temporary velocity dissipation devices, flow diversion mechanisms, and other similar measures.

(ii) The following records must be maintained and either attached to or referenced in the SWP3, and made readily available upon request to the parties listed in Part III.D.1 of this general permit:

(A) the dates when major grading activities occur;

(B) the dates when construction activities temporarily or permanently cease on a portion of the site; and

(C) the dates when stabilization measures are initiated.

(iii) Erosion control and stabilization measures must be initiated immediately in portions of the site where construction activities have temporarily ceased and will not resume for a period exceeding 14 calendar days. Stabilization measures that provide a protective cover must be initiated immediately in portions of the site where construction activities have permanently ceased. The term "immediately" is used to define the deadline for initiating stabilization measures. In the context of this requirement, "immediately" means as soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased. Except as provided in (A) through (D) below, these measures must be completed as soon as practicable, but no more than 14 calendar days after the initiation of soil stabilization measures:

(A) Where the immediate initiation of stabilization measures after construction activity temporarily or permanently ceased is precluded

by snow cover or frozen ground conditions, stabilization measures must be initiated as soon as practicable.

(B) In arid areas, semi-arid areas, or drought-stricken areas where the immediate initiation of stabilization measures after construction activity has temporarily or permanently ceased or is precluded by arid conditions, erosion control and stabilization measures must be initiated as soon as practicable. Where vegetative controls are not feasible due to arid conditions, the operator shall immediately install, and within 14 calendar days of a temporary or permanent cessation of work in any portion of the site complete, non-vegetative erosion controls. If non-vegetative controls are not feasible, the operator shall install temporary sediment controls as required in Paragraph (C) below.

(C) In areas where temporary stabilization measures are infeasible, the operator may alternatively utilize temporary perimeter controls. The operator must document in the SWP3 the reason why stabilization measures are not feasible, and must demonstrate that the perimeter controls will retain sediment on site to the extent practicable. The operator must continue to inspect the BMPs at the frequency established in Section III.F.7.(a) for unstabilized sites.

(D) If the initiation or completion of vegetative stabilization is affected by circumstances beyond the control of the permittee, vegetative stabilization must be initiated or completed as soon as conditions or circumstances allow it on the site. The requirement to initiate stabilization is triggered as soon as it is known with reasonable certainty that work will be stopped for 14 or more additional calendar days.

(iv) Final stabilization must be achieved prior to termination of permit coverage.

(v) TCEQ does not expect that temporary or permanent stabilization measures to be applied to areas that are intended to be left un-vegetated or un-stabilized following construction (e.g., dirt access roads, utility pole pads, areas being used for storage of vehicles, equipment, or materials).

(c) Sediment Control Practices

The SWP3 must include a description of any sediment control practices used to remove eroded soils from stormwater runoff, including the general timing or sequence for implementation of controls.

(i) Sites With Drainage Areas of Ten or More Acres

(A) Sedimentation Basin(s)

(1) A sedimentation basin is required, where feasible, for a common drainage location that serves an area with ten (10) or more acres disturbed at one time. A sedimentation basin may be temporary or permanent, and must provide sufficient storage to contain a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained. When calculating the volume of runoff from a 2-year, 24-hour storm event, it is not required to include the flows from offsite areas and flow from onsite areas that are either undisturbed or have already undergone permanent stabilization, if these flows are diverted around both the disturbed areas of the site and the sediment basin. Capacity calculations shall be included in the SWP3.

(2) Where rainfall data is not available or a calculation cannot be performed, the sedimentation basin must provide at least 3,600 cubic feet of storage per acre drained until final stabilization of the site.

(3) If a sedimentation basin is not feasible, then the permittee shall provide equivalent control measures until final stabilization of the site. In determining whether installing a sediment basin is feasible, the permittee may consider factors such as site soils, slope, available area, public safety, precipitation patterns, site geometry, site vegetation, infiltration capacity, geotechnical factors, depth to groundwater, and other similar considerations. The permittee shall document the reason that the sediment basins are not feasible, and shall utilize equivalent control measures, which may include a series of smaller sediment basins.

(4) Unless infeasible, when discharging from sedimentation basins and impoundments, the permittee shall utilize outlet structures that withdraw water from the surface.

(B) Perimeter Controls: At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries of the construction area, and for those side slope boundaries deemed appropriate as dictated by individual site conditions.

(ii) Controls for Sites With Drainage Areas Less than Ten Acres:

(A) Sediment traps and sediment basins may be used to control solids in stormwater runoff for drainage locations serving less than ten (10) acres. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries of the construction area, and for those side slope boundaries deemed appropriate as dictated by individual site conditions.

(B) Alternatively, a sediment basin that provides storage for a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained may be utilized. Where rainfall data is not available or a calculation cannot be performed, a temporary or permanent sediment basin providing 3,600 cubic feet of storage per acre drained may be provided. If a calculation is performed, then the calculation shall be included in the SWP3.

(C) If sedimentation basins or impoundments are used, the permittee shall comply with the requirements in Part III.G.6 of this general permit.

3. Description of Permanent Stormwater Controls

A description of any measures that will be installed during the construction process to control pollutants in stormwater discharges that may occur after construction operations have been completed must be included in the SWP3. Permittees are only responsible for the installation and maintenance of stormwater management measures prior to final stabilization of the site or prior to submission of an NOT.

4. Other Required Controls and BMPs

(a) Permittees shall minimize, to the extent practicable, the off-site vehicle tracking of sediments and the generation of dust. The SWP3 shall include a description of controls utilized to accomplish this requirement.

(b) The SWP3 must include a description of construction and waste materials expected to be stored on-site and a description of controls to minimize pollutants from these materials.

(c) The SWP3 must include a description of potential pollutant sources from areas other than construction (such as stormwater discharges from dedicated asphalt plants and dedicated concrete batch plants), and a description of controls and measures that will be implemented at those sites to minimize pollutant discharges.

(d) Permittees shall place velocity dissipation devices at discharge locations and along the length of any outfall channel (i.e., runoff conveyance) to provide a non-erosive flow velocity from the structure to a water course, so that the natural physical and biological characteristics and functions are maintained and protected.

(e) Permittees shall design and utilize appropriate controls to minimize the offsite transport of suspended sediments and other pollutants if it is necessary to pump or channel standing water from the site.

(f) Permittees shall ensure that all other required controls and BMPs comply with all of the requirements of Part III.G of this general permit.

5. Documentation of Compliance with Approved State and Local Plans

(a) Permittees must ensure that the SWP3 is consistent with requirements specified in applicable sediment and erosion site plans or site permits, or stormwater management site plans or site permits approved by federal, state, or local officials.

(b) SWP3s must be updated as necessary to remain consistent with any changes applicable to protecting surface water resources in sediment erosion site plans or site permits, or stormwater management site plans or site permits approved by state or local official for which the permittee receives written notice.

(c) If the permittee is required to prepare a separate management plan, including but not limited to a WPAP or Contributing Zone Plan in accordance with 30 TAC Chapter 213 (related to the Edwards Aquifer), then a copy of that plan must be either included in the SWP3 or made readily available upon request to authorized personnel of the TCEQ. The permittee shall maintain a copy of the approval letter for the plan in its SWP3.

6. Maintenance Requirements

(a) All protective measures identified in the SWP3 must be maintained in effective operating condition. If, through inspections or other means, the permittee determines that BMPs are not operating effectively, then the permittee shall perform maintenance as necessary to maintain the continued effectiveness of stormwater controls, and prior to the next rain event if feasible. If maintenance prior to the next anticipated storm event is impracticable, the reason shall be documented in the SWP3 and maintenance must be scheduled and accomplished as soon as practicable. Erosion and sediment controls that have been intentionally disabled, run-over, removed, or otherwise rendered ineffective must be replaced or corrected immediately upon discovery.

(b) If periodic inspections or other information indicates a control has been used incorrectly, is performing inadequately, or is damaged, then the operator shall replace or modify the control as soon as practicable after making the discovery.

(c) Sediment must be removed from sediment traps and sedimentation ponds no later than the time that design capacity has been reduced by 50%. For perimeter

controls such as silt fences, berms, etc., the trapped sediment must be removed before it reaches 50% of the above-ground height.

(d) If sediment escapes the site, accumulations must be removed at a frequency that minimizes off-site impacts, and prior to the next rain event, if feasible. If the permittee does not own or operate the off-site conveyance, then the permittee shall work with the owner or operator of the property to remove the sediment.

7. Inspections of Controls

(a) Personnel provided by the permittee must inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, discharge locations, and structural controls for evidence of, or the potential for, pollutants entering the drainage system. Personnel conducting these inspections must be knowledgeable of this general permit, familiar with the construction site, and knowledgeable of the SWP3 for the site. Sediment and erosion control measures identified in the SWP3 must be inspected to ensure that they are operating correctly. Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking. Inspections must be conducted at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.

Where sites have been finally or temporarily stabilized or where runoff is unlikely due to winter conditions (e.g. site is covered with snow, ice, or frozen ground exists), inspections must be conducted at least once every month. In arid, semi-arid, or drought-stricken areas, inspections must be conducted at least once every month and within 24 hours after the end of a storm event of 0.5 inches or greater. The SWP3 must also contain a record of the total rainfall measured, as well as the approximate beginning and ending dates of winter or drought conditions resulting in monthly frequency of inspections.

As an alternative to the above-described inspection schedule of once every 14 calendar days and within 24 hours of a storm event of 0.5 inches or greater, the SWP3 may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, then the inspection must occur regardless of whether or not there has been a rainfall event since the previous inspection.

The inspections may occur on either schedule provided that the SWP3 reflects the current schedule and that any changes to the schedule are conducted in accordance with the following provisions: the schedule may be changed a maximum of one time each month, the schedule change must be implemented at the beginning of a calendar month, and the reason for the schedule change must be documented in the SWP3 (e.g., end of "dry" season and beginning of "wet" season).

(b) Utility line installation, pipeline construction, and other examples of long, narrow, linear construction activities may provide inspection personnel with limited access to the areas described in Part III.F.7.(a) above. Inspection of these areas could require that vehicles compromise temporarily or even permanently stabilized areas, cause additional disturbance of soils, and increase the potential for erosion. In these circumstances, controls must be inspected at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater, but representative inspections may be performed. For representative inspections, personnel must inspect controls along the construction site for 0.25 mile above and below each access point where a roadway, undisturbed right-of-way, or other similar feature intersects the construction site and allows access to the areas described in Part III.F.7.(a)

above. The conditions of the controls along each inspected 0.25 mile portion may be considered as representative of the condition of controls along that reach extending from the end of the 0.25 mile portion to either the end of the next 0.25 mile inspected portion, or to the end of the project, whichever occurs first.

As an alternative to the above-described inspection schedule of once every 14 calendar days and within 24 hours of a storm event of 0.5 inches or greater, the SWP3 may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, the inspection must occur regardless of whether or not there has been a rainfall event since the previous inspection. The inspections may occur on either schedule provided that the SWP3 reflects the current schedule and that any changes to the schedule are conducted in accordance with the following provisions: the schedule may be changed a maximum of one time each month, the schedule change must be implemented at the beginning of a calendar month, and the reason for the schedule change must be documented in the SWP3 (e.g., end of "dry" season and beginning of "wet" season).

(c) In the event of flooding or other uncontrollable situations which prohibit access to the inspection sites, inspections must be conducted as soon as access is practicable.

(d) The SWP3 must be modified based on the results of inspections, as necessary, to better control pollutants in runoff. Revisions to the SWP3 must be completed within seven (7) calendar days following the inspection. If existing BMPs are modified or if additional BMPs are necessary, an implementation schedule must be described in the SWP3 and wherever possible those changes implemented before the next storm event. If implementation before the next anticipated storm event is impracticable, these changes must be implemented as soon as practicable.

(e) A report summarizing the scope of the inspection, the date(s) of the inspection, and major observations relating to the implementation of the SWP3 must be made and retained as part of the SWP3. Major observations should include: The locations of discharges of sediment or other pollutants from the site; locations of BMPs that need to be maintained; locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and locations where additional BMPs are needed.

Actions taken as a result of inspections must be described within, and retained as a part of, the SWP3. Reports must identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the facility or site is in compliance with the SWP3 and this permit. The report must be signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).

The names and qualifications of personnel making the inspections for the permittee may be documented once in the SWP3 rather than being included in each report.

8. The SWP3 must identify and ensure the implementation of appropriate pollution prevention measures for all eligible non-stormwater components of the discharge, as listed in Part II.A.3. of this permit.
9. The SWP3 must include the information required in Part III.B. of this general permit.
10. The SWP3 must include pollution prevention procedures that comply with Part III.G.4 of this general permit.

Section G. Erosion and Sediment Control Requirements Applicable to All Sites

Except as provided in 40 CFR §§125.30-125.32, any discharge regulated under this general permit, with the exception of sites that obtained waivers based on low rainfall erosivity, must achieve, at a minimum, the following effluent limitations representing the degree of effluent reduction attainable by application of the best practicable control technology currently available (BPT).

1. *Erosion and sediment controls.* Design, install, and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, such controls must be designed, installed, and maintained to:

   (a) Control stormwater volume and velocity within the site to minimize soil erosion;

   (b) If any stormwater flow will be channelized at the site, stormwater controls must be designed to control both peak flowrates and total stormwater volume to minimize erosion at outlets and to minimize downstream channel and streambank erosion;

   (c) Minimize the amount of soil exposed during construction activity;

   (d) Minimize the disturbance of steep slopes;

   (e) Minimize sediment discharges from the site. The design, installation, and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site;

   (f) If earth disturbance activities are located in close proximity to a surface water, provide and maintain appropriate natural buffers if feasible and as necessary, around surface waters, depending on site-specific topography, sensitivity, and proximity to water bodies. Direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration. If providing buffers is infeasible, the permittee shall document the reason that natural buffers are not feasible, and shall implement additional erosion and sediment controls to reduce sediment load;

   (g) Preserve native topsoil at the site, unless infeasible; and

   (h) Minimize soil compaction in post-construction pervious areas. In areas of the construction site where final vegetative stabilization will occur or where infiltration practices will be installed, either:

      (1) restrict vehicle and equipment use to avoid soil compaction; or

      (2) prior to seeding or planting areas of exposed soil that have been compacted, use techniques that condition the soils to support vegetative growth, if necessary and feasible;

   (i) TCEQ does not consider stormwater control features (e.g., stormwater conveyance channels, storm drain inlets, sediment basins) to constitute "surface waters" for the purposes of triggering the buffer requirement in Part III.G.(f) above.

2. *Soil stabilization.* Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating, or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. In the context of this requirement, "immediately" means as soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased. Temporary

stabilization must be completed no more than 14 calendar days after initiation of soil stabilization measures, and final stabilization must be achieved prior to termination of permit coverage. In arid, semi-arid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative non-vegetative stabilization measures must be employed as soon as practicable. Refer to Part III.F.2.(b) for complete erosion control and stabilization practice requirements.

3. *Dewatering.* Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited, unless managed by appropriate controls.
4. *Pollution prevention measures.* Design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented, and maintained to:
   (a) Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
   (b) Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to precipitation and to stormwater; and
   (c) Minimize the discharge of pollutants from spills and leaks, and implement chemical spill and leak prevention and response procedures.
5. *Prohibited discharges.* The following discharges are prohibited:
   (a) Wastewater from wash out of concrete trucks, unless managed by an appropriate control (see Part V of the general permit);
   (b) Wastewater from wash out and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
   (c) Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and
   (d) Soaps or solvents used in vehicle and equipment washing.
6. *Surface outlets.* When discharging from basins and impoundments, utilize outlet structures that withdraw water from the surface, unless infeasible.

Part IV. Stormwater Runoff from Concrete Batch Plants

Discharges of stormwater runoff from concrete batch plants at regulated construction sites may be authorized under the provisions of this general permit provided that the following requirements are met for concrete batch plant(s) authorized under this permit. If discharges of stormwater runoff from concrete batch plants are not covered under this general permit, then discharges must be authorized under an alternative general permit or individual permit. This permit does not authorize the discharge or land disposal of any wastewater from concrete batch plants at regulated construction sites. Authorization for these wastes must be obtained under an individual permit or an alternative general permit.

Section A. Benchmark Sampling Requirements

1. Operators of concrete batch plants authorized under this general permit shall sample the stormwater runoff from the concrete batch plants according to the requirements

of this section of this general permit, and must conduct evaluations on the effectiveness of the SWP3 based on the following benchmark monitoring values:

Table 1. Benchmark Parameters

Benchmark Parameter	Benchmark Value	Sampling Frequency	Sample Type
Oil and Grease	15 mg/L	1/quarter (*1) (*2)	Grab (*3)
Total Suspended Solids	100 mg/L	1/quarter (*1) (*2)	Grab (*3)
pH	6.0 – 9.0 Standard Units	1/quarter (*1) (*2)	Grab (*3)
Total Iron	1.3 mg/L	1/quarter (*1) (*2)	Grab (*3)

(*1) When discharge occurs. Sampling is required within the first 30 minutes of discharge. If it is not practicable to take the sample, or to complete the sampling, within the first 30 minutes, sampling must be completed within the first hour of discharge. If sampling is not completed within the first 30 minutes of discharge, the reason must be documented and attached to all required reports and records of the sampling activity.

(*2) Sampling must be conducted at least once during each of the following periods. The first sample must be collected during the first full quarter that a stormwater discharge occurs from a concrete batch plant authorized under this general permit.

January through March

April through June

July through September

October through December

For projects lasting less than one full quarter, a minimum of one sample shall be collected, provided that a stormwater discharge occurred at least once following submission of the NOI or following the date that automatic authorization was obtained under Section II.E.2., and prior to terminating coverage.

(*3) A grab sample shall be collected from the stormwater discharge resulting from a storm event that is at least 0.1 inches of measured precipitation that occurs at least 72 hours from the previously measurable storm event. The sample shall be collected downstream of the concrete batch plant, and where the discharge exits any BMPs utilized to handle the runoff from the batch plant, prior to commingling with any other water authorized under this general permit.

2. The permittee must compare the results of sample analyses to the benchmark values above, and must include this comparison in the overall assessment of the SWP3's effectiveness. Analytical results that exceed a benchmark value are not a violation of this permit, as these values are not numeric effluent limitations. Results of analyses are indicators that modifications of the SWP3 should be assessed and may be necessary to protect water quality. The operator must investigate the cause for each exceedance and must document the results of this investigation in the SWP3 by the end of the quarter following the sampling event.

The operator's investigation must identify the following:

(a) any additional potential sources of pollution, such as spills that might have occurred,

(b) necessary revisions to good housekeeping measures that are part of the SWP3,

(c) additional BMPs, including a schedule to install or implement the BMPs, and

(d) other parts of the SWP3 that may require revisions in order to meet the goal of the benchmark values.

Background concentrations of specific pollutants may also be considered during the investigation. If the operator is able to relate the cause of the exceedance to background concentrations, then subsequent exceedances of benchmark values for that pollutant may be resolved by referencing earlier findings in the SWP3. Background concentrations may be identified by laboratory analyses of samples of stormwater runon to the permitted facility, by laboratory analyses of samples of stormwater run-off from adjacent non-industrial areas, or by identifying the pollutant is a naturally occurring material in soils at the site.

Section B. Best Management Practices (BMPs) and SWP3 Requirements

Minimum SWP3 Requirements – The following are required in addition to other SWP3 requirements listed in this general permit (including, but not limited to Part III.F.7. of this permit):

1. Description of Potential Pollutant Sources - The SWP3 must provide a description of potential sources (activities and materials) that may reasonably be expected to affect the quality of stormwater discharges associated with concrete batch plants authorized under this permit. The SWP3 must describe practices that that will be used to reduce the pollutants in these discharges to assure compliance with this general permit, including the protection of water quality, and must ensure the implementation of these practices.

   The following must be developed, at a minimum, in support of developing this description:

   (a) Drainage – The site map must include the following information:

      (1) the location of all outfalls for stormwater discharges associated with concrete batch plants that are authorized under this permit;

      (2) a depiction of the drainage area and the direction of flow to the outfall(s);

      (3) structural controls used within the drainage area(s);

      (4) the locations of the following areas associated with concrete batch plants that are exposed to precipitation: vehicle and equipment maintenance activities (including fueling, repair, and storage areas for vehicles and equipment scheduled for maintenance); areas used for the treatment, storage, or disposal of wastes; liquid storage tanks; material processing and storage areas; and loading and unloading areas; and

      (5) the locations of the following: any bag house or other dust control device(s); recycle/sedimentation pond, clarifier or other device used for the treatment of facility wastewater (including the areas that drain to the treatment device); areas with significant materials; and areas where major spills or leaks have occurred.

   (b) Inventory of Exposed Materials – A list of materials handled at the concrete batch plant that may be exposed to stormwater and that have a potential to

affect the quality of stormwater discharges associated with concrete batch plants that are authorized under this general permit.

(c) Spills and Leaks - A list of significant spills and leaks of toxic or hazardous pollutants that occurred in areas exposed to stormwater and that drain to stormwater outfalls associated with concrete batch plants authorized under this general permit must be developed, maintained, and updated as needed.

(d) Sampling Data - A summary of existing stormwater discharge sampling data must be maintained, if available.

2. Measures and Controls - The SWP3 must include a description of management controls to regulate pollutants identified in the SWP3's "Description of Potential Pollutant Sources" from Part IV.B.1.(a) of this permit, and a schedule for implementation of the measures and controls. This must include, at a minimum:

(a) Good Housekeeping - Good housekeeping measures must be developed and implemented in the area(s) associated with concrete batch plants.

(1) Operators must prevent or minimize the discharge of spilled cement, aggregate (including sand or gravel), settled dust, or other significant materials from paved portions of the site that are exposed to stormwater. Measures used to minimize the presence of these materials may include regular sweeping or other equivalent practices. These practices must be conducted at a frequency that is determined based on consideration of the amount of industrial activity occurring in the area and frequency of precipitation, and shall occur at least once per week when cement or aggregate is being handled or otherwise processed in the area.

(2) Operators must prevent the exposure of fine granular solids, such as cement, to stormwater. Where practicable, these materials must be stored in enclosed silos, hoppers or buildings, in covered areas, or under covering.

(b) Spill Prevention and Response Procedures - Areas where potential spills that can contribute pollutants to stormwater runoff, and the drainage areas from these locations, must be identified in the SWP3. Where appropriate, the SWP3 must specify material handling procedures, storage requirements, and use of equipment. Procedures for cleaning up spills must be identified in the SWP3 and made available to the appropriate personnel.

(c) Inspections - Qualified facility personnel (i.e., a person or persons with knowledge of this general permit, the concrete batch plant, and the SWP3 related to the concrete batch plant(s) for the site) must be identified to inspect designated equipment and areas of the facility specified in the SWP3. The inspection frequency must be specified in the SWP3 based upon a consideration of the level of concrete production at the facility, but must be a minimum of once per month while the facility is in operation. The inspection must take place while the facility is in operation and must, at a minimum, include all areas that are exposed to stormwater at the site, including material handling areas, above ground storage tanks, hoppers or silos, dust collection/containment systems, truck wash down and equipment cleaning areas. Follow-up procedures must be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections must be maintained and be made readily available for inspection upon request.

(d) Employee Training - An employee training program must be developed to educate personnel responsible for implementing any component of the SWP3, or personnel otherwise responsible for stormwater pollution prevention, with the provisions of the SWP3. The frequency of training must be documented in

the SWP3, and at a minimum, must consist of one training prior to the initiation of operation of the concrete batch plant.

(e) Record Keeping and Internal Reporting Procedures - A description of spills and similar incidents, plus additional information that is obtained regarding the quality and quantity of stormwater discharges, must be included in the SWP3. Inspection and maintenance activities must be documented and records of those inspection and maintenance activities must be incorporated in the SWP3.

(f) Management of Runoff - The SWP3 shall contain a narrative consideration for reducing the volume of runoff from concrete batch plants by diverting runoff or otherwise managing runoff, including use of infiltration, detention ponds, retention ponds, or reusing of runoff.

3. Comprehensive Compliance Evaluation – At least once per year, one or more qualified personnel (i.e., a person or persons with knowledge of this general permit, the concrete batch plant, and the SWP3 related to the concrete batch plant(s) for the site) shall conduct a compliance evaluation of the plant. The evaluation must include the following.

(a) Visual examination of all areas draining stormwater associated with regulated concrete batch plants for evidence of, or the potential for, pollutants entering the drainage system. These include but are not limited to: cleaning areas, material handling areas, above ground storage tanks, hoppers or silos, dust collection/containment systems, and truck wash down and equipment cleaning areas. Measures implemented to reduce pollutants in runoff (including structural controls and implementation of management practices) must be evaluated to determine if they are effective and if they are implemented in accordance with the terms of this permit and with the permittee's SWP3. The operator shall conduct a visual inspection of equipment needed to implement the SWP3, such as spill response equipment.

(b) Based on the results of the evaluation, the following must be revised as appropriate within two weeks of the evaluation: the description of potential pollutant sources identified in the SWP3 (as required in Part IV.B.1., "Description of Potential Pollutant Sources"); and pollution prevention measures and controls identified in the SWP3 (as required in Part IV.B.2., "Measures and Controls"). The revisions may include a schedule for implementing the necessary changes.

(c) The permittee shall prepare and include in the SWP3 a report summarizing the scope of the evaluation, the personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the SWP3, and actions taken in response to the findings of the evaluation. The report must identify any incidents of noncompliance. Where the report does not identify incidences of noncompliance, the report must contain a statement that the evaluation did not identify any incidence(s), and the report must be signed according to 30 TAC §305.128, relating to Signatories to Reports.

(d) The Comprehensive Compliance Evaluation may substitute for one of the required inspections delineated in Part IV.B.2.(c) of this general permit.

Section C. Prohibition of Wastewater Discharges

Wastewater discharges associated with concrete production including wastewater disposal by land application are not authorized under this general permit. These wastewater discharges must be authorized under an alternative TCEQ water quality permit or otherwise disposed of in an authorized manner. Discharges of concrete truck wash out at construction sites may be authorized if conducted in accordance with the requirements of Part V of this general permit.

Part V. Concrete Truck Wash Out Requirements

This general permit authorizes the wash out of concrete trucks at construction sites regulated under Sections II.E.1., 2., and 3. of this general permit, provided the following requirements are met. Authorization is limited to the land disposal of wash out water from concrete trucks. Any other direct discharge of concrete production waste water must be authorized under a separate TCEQ general permit or individual permit.

1. Direct discharge of concrete truck wash out water to surface water in the state, including discharge to storm sewers, is prohibited by this general permit.
2. Concrete truck wash out water shall be discharged to areas at the construction site where structural controls have been established to prevent direct discharge to surface waters, or to areas that have a minimal slope that allow infiltration and filtering of wash out water to prevent direct discharge to surface waters. Structural controls may consist of temporary berms, temporary shallow pits, temporary storage tanks with slow rate release, or other reasonable measures to prevent runoff from the construction site.
3. Wash out of concrete trucks during rainfall events shall be minimized. The direct discharge of concrete truck wash out water is prohibited at all times, and the operator shall insure that its BMPs are sufficient to prevent the discharge of concrete truck wash out as the result of rainfall or stormwater runoff.
4. The discharge of wash out water must not cause or contribute to groundwater contamination.
5. If a SWP3 is required to be implemented, the SWP3 shall include concrete wash out areas on the associated site map.

Part VI. Retention of Records

The permittee must retain the following records for a minimum period of three (3) years from the date that a NOT is submitted as required by Part II.E.3. For activities in which an NOT is not required, records shall be retained for a minimum period of three (3) years from the date that the operator terminates coverage under Section II.F.3. of this permit. Records include:

1. A copy of the SWP3;
2. All reports and actions required by this permit, including a copy of the construction site notice;
3. All data used to complete the NOI, if an NOI is required for coverage under this general permit; and
4. All records of submittal of forms submitted to the operator of any MS4 receiving the discharge and to the secondary operator of a large construction site, if applicable.

Part VII. Standard Permit Conditions

1. The permittee has a duty to comply with all permit conditions. Failure to comply with any permit condition is a violation of the permit and statutes under which it was issued, and is grounds for enforcement action, for terminating, revoking, or denying coverage under this general permit, or for requiring a discharger to apply for and obtain an individual TPDES permit.
2. Authorization under this general permit may be suspended or revoked for cause. Filing a notice of planned changes or anticipated non-compliance by the permittee does not stay any permit condition. The permittee must furnish to the executive director, upon request and within a reasonable time, any information necessary for the executive director to determine whether cause exists for revoking, suspending, or

terminating authorization under this permit. Additionally, the permittee must provide to the executive director, upon request, copies of all records that the permittee is required to maintain as a condition of this general permit.

3. It is not a defense for a discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the permit conditions.
4. Inspection and entry shall be allowed under TWC Chapters 26-28, Texas Health and Safety Code §§361.032-361.033 and 361.037, and 40 CFR §122.41(i). The statement in TWC §26.014 that commission entry of a facility shall occur according to an establishment's rules and regulations concerning safety, internal security, and fire protection is not grounds for denial or restriction of entry to any part of the facility or site, but merely describes the commission's duty to observe appropriate rules and regulations during an inspection.
5. The discharger is subject to administrative, civil, and criminal penalties, as applicable, under TWC Chapter 7 for violations including but not limited to the following:
   (a) negligently or knowingly violating the federal CWA §§301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under CWA §402, or any requirement imposed in a pretreatment program approved under CWA §§402(a)(3) or 402(b)(8);
   (b) knowingly making any false statement, representation, or certification in any record or other document submitted or required to be maintained under a permit, including monitoring reports or reports of compliance or noncompliance; and
   (c) knowingly violating §303 of the federal CWA, and placing another person in imminent danger of death or serious bodily injury.
6. All reports and other information requested by the executive director must be signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).
7. Authorization under this general permit does not convey property or water rights of any sort and does not grant any exclusive privilege.
8. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.
9. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
10. The permittee shall comply with the reporting requirements in 40 CFR §122.41(l), as applicable.

Part VIII. Fees

1. A fee of must be submitted along with the NOI:
   (a) $325 if submitting a paper NOI, or
   (b) $225 if submitting an NOI electronically.

2. Fees are due upon submission of the NOI. An NOI will not be declared administratively complete unless the associated fee has been paid in full.
3. No separate annual fees will be assessed for this general permit. The Water Quality Annual Fee has been incorporated into the NOI fees as described above.

Appendix A: Automatic Authorization

Periods of Low Erosion Potential by County – Eligible Date Ranges

Andrews: Nov. 15 - Apr. 30

Archer: Dec. 15 - Feb. 14

Armstrong: Nov. 15 - Apr. 30

Bailey: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Baylor: Dec. 15 - Feb. 14

Borden: Nov. 15 - Apr. 30

Brewster: Nov. 15 - Apr. 30

Briscoe: Nov. 15 - Apr. 30

Brown: Dec. 15 - Feb. 14

Callahan: Dec. 15 - Feb. 14

Carson: Nov. 15 - Apr. 30

Castro: Nov. 15 - Apr. 30

Childress: Dec. 15 - Feb. 14

Cochran: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Coke: Dec. 15 - Feb. 14

Coleman: Dec. 15 - Feb. 14

Collingsworth: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28

Concho: Dec. 15 - Feb. 14

Cottle: Dec. 15 - Feb. 14

Crane: Nov. 15 - Apr. 30

Crockett: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30

Crosby: Nov. 15 - Apr. 30

Culberson: Nov. 1 - May 14

Dallam: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Dawson: Nov. 15 - Apr. 30

Deaf Smith: Nov. 15 - Apr. 30

Dickens: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30

Dimmit: Dec. 15 - Feb. 14

Donley: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28

Eastland: Dec. 15 - Feb. 14

Ector: Nov. 15 - Apr. 30

Edwards: Dec. 15 - Feb. 14

El Paso: Jan. 1 - Jul. 14, or May 15 - Jul. 31, or Jun. 1 - Aug. 14, or Jun. 15 - Sept. 14, or Jul. 1 - Oct. 14, or Jul. 15 - Oct. 31, or Aug. 1 - Apr. 30, or Aug. 15 - May 14, or Sept. 1 - May 30, or Oct. 1 - Jun. 14, or Nov. 1 - Jun. 30, or Nov. 15 - Jul. 14

Fisher: Dec. 15 - Feb. 14

Floyd: Nov. 15 - Apr. 30

Foard: Dec. 15 - Feb. 14

Gaines: Nov. 15 - Apr. 30

Garza: Nov. 15 - Apr. 30

Glasscock: Nov. 15 - Apr. 30

Hale: Nov. 15 - Apr. 30

Hall: Feb. 1 - Mar. 30

Hansford: Nov. 15 - Apr. 30

Hardeman: Dec. 15 - Feb. 14

Hartley: Nov. 15 - Apr. 30

Haskell: Dec. 15 - Feb. 14

Hockley: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Howard: Nov. 15 - Apr. 30

Hudspeth: Nov. 1 - May 14

Hutchinson: Nov. 15 - Apr. 30

Irion: Dec. 15 - Feb. 14

Jeff Davis: Nov. 1 - Apr. 30 or Nov. 15 - May 14

Jones: Dec. 15 - Feb. 14

Kent: Nov. 15 - Jan. 14 or Feb. 1 - Mar. 30

Kerr: Dec. 15 - Feb. 14

Kimble: Dec. 15 - Feb. 14

King: Dec. 15 - Feb. 14

Kinney: Dec. 15 - Feb. 14

Knox: Dec. 15 - Feb. 14

Lamb: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Loving: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Lubbock: Nov. 15 - Apr. 30

Lynn: Nov. 15 - Apr. 30

Martin: Nov. 15 - Apr. 30

Mason: Dec. 15 - Feb. 14

Maverick: Dec. 15 - Feb. 14

McCulloch: Dec. 15 - Feb. 14

Menard: Dec. 15 - Feb. 14

Midland: Nov. 15 - Apr. 30

Mitchell: Nov. 15 - Apr. 30

Moore: Nov. 15 - Apr. 30

Motley: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30

Nolan: Dec. 15 - Feb. 14

Oldham: Nov. 15 - Apr. 30

Parmer: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Pecos: Nov. 15 - Apr. 30

Potter: Nov. 15 - Apr. 30

Presidio: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Randall: Nov. 15 - Apr. 30

Reagan: Nov. 15 - Apr. 30

Real: Dec. 15 - Feb. 14

Reeves: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Runnels: Dec. 15 - Feb. 14

Schleicher: Dec. 15 - Feb. 14

Scurry: Nov. 15 - Apr. 30

Shackelford: Dec. 15 - Feb. 14

Sherman: Nov. 15 - Apr. 30

Stephens: Dec. 15 - Feb. 14

Sterling: Nov. 15 - Apr. 30

Stonewall: Dec. 15 - Feb. 14

Sutton: Dec. 15 - Feb. 14

Swisher: Nov. 15 - Apr. 30

Taylor: Dec. 15 - Feb. 14

Terrell: Nov. 15 - Apr. 30

Terry: Nov. 15 - Apr. 30

Throckmorton: Dec. 15 - Feb. 14

Tom Green: Dec. 15 - Feb. 14

Upton: Nov. 15 - Apr. 30

Uvalde: Dec. 15 - Feb. 14

Val Verde: Nov. 15 - Jan. 14, or Feb. 1 - Mar. 30

Ward: Nov. 1 - Apr. 14, or Nov. 15 - Apr. 30

Wichita: Dec. 15 - Feb. 14

Wilbarger: Dec. 15 - Feb. 14

Winkler: Nov. 1 - Apr. 30, or Nov. 15 - May 14

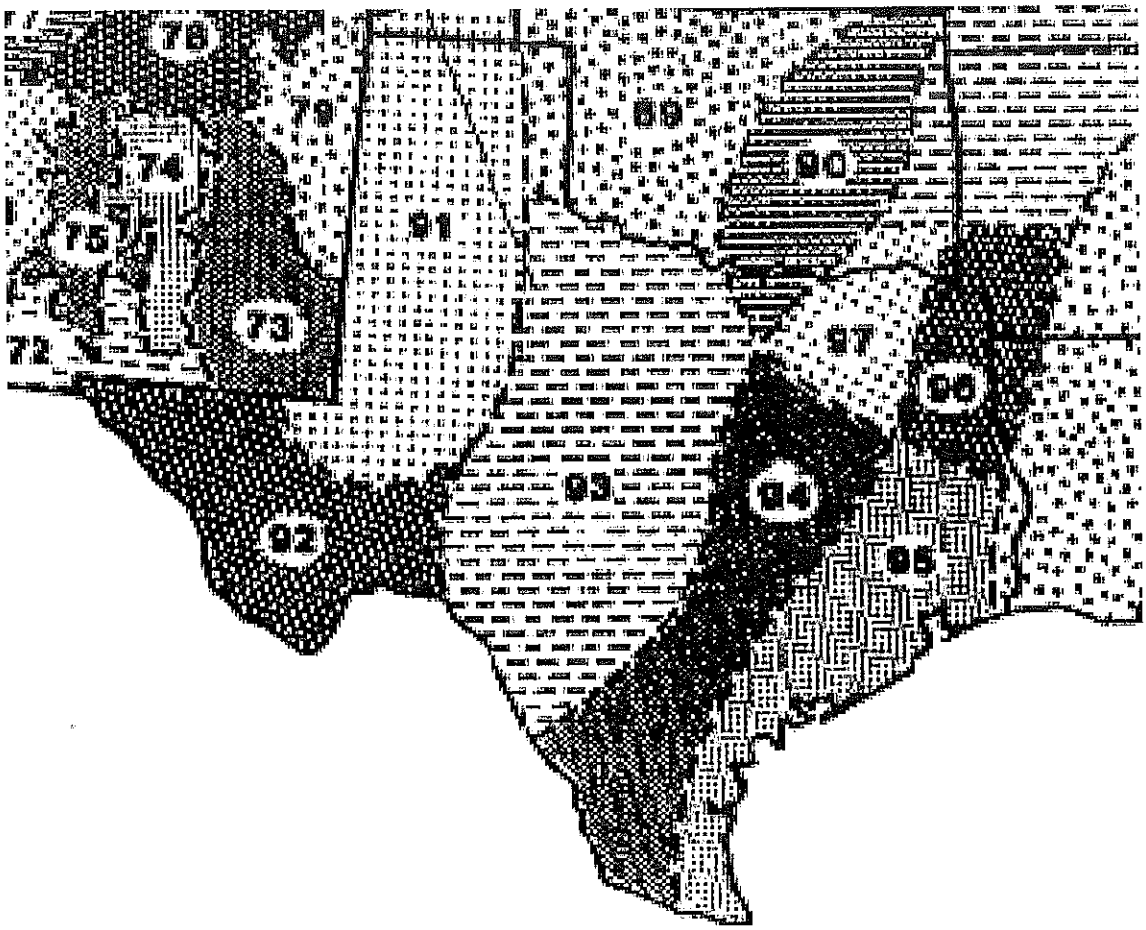
Yoakum: Nov. 1 - Apr. 30, or Nov. 15 - May 14

Young: Dec. 15 - Feb. 14

Wheeler: Jan. 1 - Mar. 30, or Dec. 1 - Feb. 28

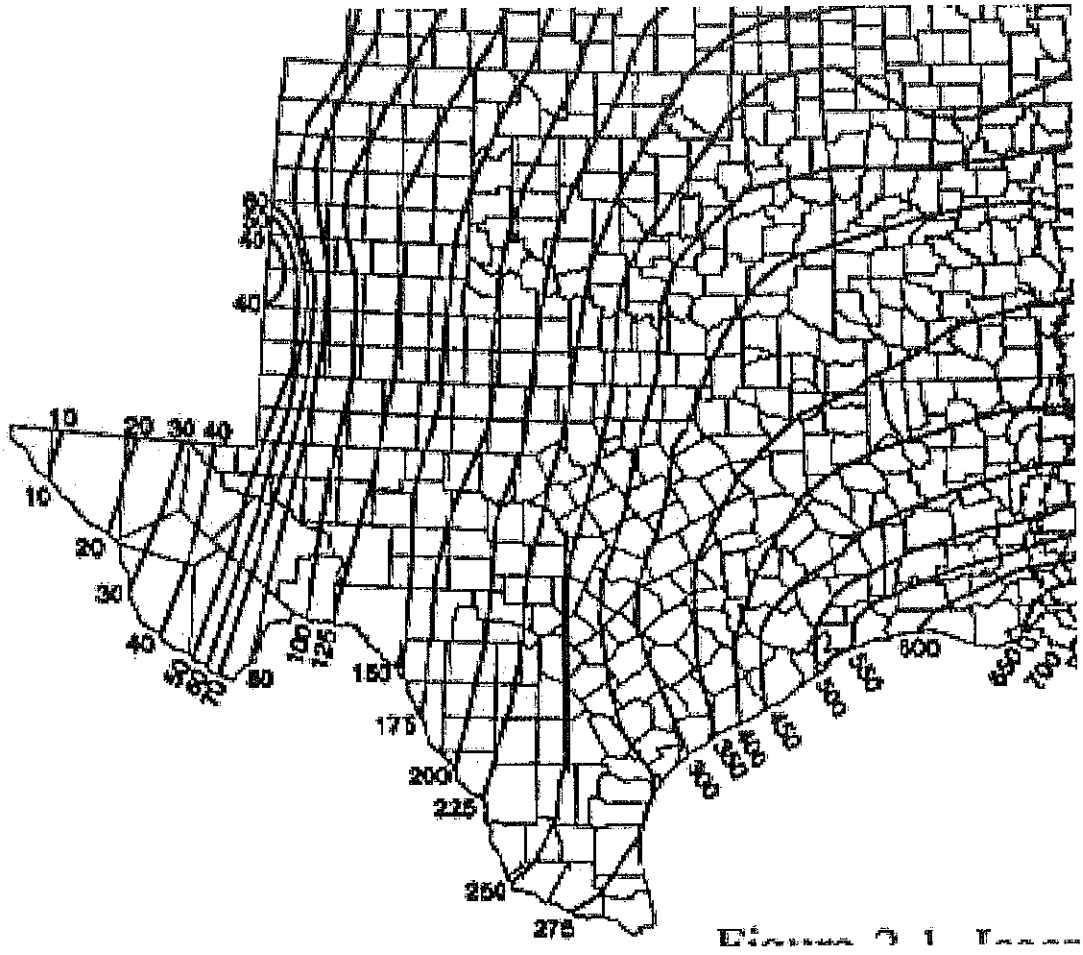
Zavala: Dec. 15 - Feb. 14

Appendix B: Erosivity Index (EI) Zones in Texas



Adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service

Appendix C: Isoerodent Map



Adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service

Appendix D: Erosivity Indices for EI Zones in Texas

Periods:

EI #	1/1	1/16	1/31	2/15	3/1	3/16	3/31	4/15	4/30	5/15	5/30	6/14	6/29	7/14	7/29	8/13	8/28	9/12	9/27	10/12	10/27	11/11	11/26	12/11	12/31
89	0	1	1	2	3	4	7	2	8	27	38	48	55	62	69	76	83	90	94	97	98	99	100	100	100
90	0	1	2	3	4	6	8	13	21	29	37	46	54	60	65	69	74	81	87	92	95	97	98	99	100
91	0	0	0	0	1	1	1	2	6	16	29	39	46	53	60	67	74	81	88	95	99	99	100	100	100
92	0	0	0	0	1	1	1	2	6	16	29	39	46	53	60	67	74	81	88	95	99	99	100	100	100
93	0	1	1	2	3	4	6	8	13	25	40	49	56	62	67	72	76	80	85	91	97	98	99	99	100
94	0	1	2	4	6	8	10	15	21	29	38	47	53	57	61	65	70	76	83	88	91	94	96	98	100
95	0	1	3	5	7	9	11	14	18	27	35	41	46	51	57	62	68	73	79	84	89	93	96	98	100
96	0	2	4	6	9	12	17	23	30	37	43	49	54	58	62	66	70	74	78	82	86	90	94	97	100
97	0	1	3	5	7	10	14	20	28	37	48	56	61	64	68	72	77	81	86	89	92	95	98	99	100
106	0	3	6	9	13	17	21	27	33	38	44	49	55	61	67	71	75	78	81	84	86	90	94	97	100

* Each period begins on the date listed in the table above and lasts until the day before the following period. The final period begins on December 11 and ends on December 31.

Table adapted from Chapter 2 of USDA Agriculture Handbook 703: "Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)," U.S. Department of Agriculture, Agricultural Research Service

SECTION 02100 -- SITE PREPARATION

PART 1 - GENERAL

1.01 Scope of Work

Provide site preparation as shown on the drawings and specified herein. Work shall consist of, but is not limited to the following:

A. The surface within areas where earthwork is to occur shall be scraped to remove all vegetation. The resulting surface shall be scarified or plowed. Unsuitable materials encountered shall be excavated and removed as specified before placing earth fill.
B. Protection of all utilities and site improvements, including sanitary sewer, water, petroleum pipelines, natural gas lines, and electrical and telephone transmission lines.
C. Clearing, grubbing, and legal disposal of all obstructions such as trees, stumps, hedges, other vegetation as designated on the plans, other accumulation of rubbish of whatever nature, and existing structures not otherwise provided for on the drawings.
D. Protect all trees and plant material designated on site. Do not damage or remove trees, unless so designated on the plans.

PART 2 – PRODUCTS

Not Included in this Section

PART 3 - EXECUTION

3.01 Protection

A. Locate existing utilities; provide adequate protection and support during construction operations. If uncharted or incorrectly charted piping or other utilities are encountered during earthwork, consult Utility Owner and Landscape Architect immediately for directions as to procedure. Cooperate with Owner, and public and private utility companies to keep their services and facilities in operation. Repair damaged utilities to the satisfaction of utility owner at no cost to the Owner or Landscape Architect.
B. Protect improvements on site and along access routes; provide barricades, coverings, or other types of protection as necessary to prevent damage. Restore to original condition improvements damaged by the work.
C. Trees and vegetation, designated to remain, shall be protected against unnecessary cutting, breaking, bruising, smothering by stockpiling excavated materials within drip line, or parking of vehicles within drip line. Provide temporary fences, tree wells, barricades or guards; repair or replace trees and vegetation damaged by construction operations.
D. Maintain survey monuments, reference points, and monuments; notify Owner of disturbance to markers.

3.02 Site Clearing

A. Remove snags, shrubs, brush, growths of grass, weeds and other vegetation, improvements identified by the owner as rubbish and debris, and obstructions that interfere with proposed construction.
B. Trees designated to be removed shall be felled and stumps, root clusters and roots having a diameter of one inch or larger, shall be grubbed out to a depth of at least twelve inches (12") below existing or finish grade whichever is deeper.

3.03 Reserved

3.04 Debris Disposal

Remove cleared and grubbed material and other debris from site; legally dispose at contractor's expense.

(End of Section)

SECTION 02201 – Earthwork (Site)

PART 1 - GENERAL

1.01 SCOPE OF WORK: Construct earth fills to the lines and grades shown on the drawings and as specified. Work shall consist of, but is not limited to, the following:

A. Removal and stockpiling of on-site topsoil in those areas to be cut or that receive fill.
B. Cut and fill as per the plans.
C. Placement, moisture control and compaction of earth fills.

1.02 RELATED WORK

1.03 TEST REPORTS: The Contractor shall pay for all testing requirements from the testing allowance and will submit test reports from a commercial testing laboratory as specified herein and in the Conditions of the Contract.

1.05 MEASUREMENT AND PAYMENT: The cost of furnishing all equipment, labor, and materials to prepare site, excavate, transport, place, and compact earth fills as per plans and specifications shall be included in the Base Bid Proposal.

PART 2 - PRODUCTS

2.01 UNCLASSIFIED EXCAVATION: Unclassified excavation shall consist of all excavation, unless separately designated, within the limits of the work. Unclassified excavation includes all material encountered regardless of its nature or the manner in which it is to be excavated.

2.02 UNCLASSIFIED FILL: Unclassified fill shall consist of all fill within the limits of the work. All suitable native materials removed in unclassified excavation, or similar imported materials, shall be used insofar as practicable as unclassified fill. Properly deposited, conditioned, and compacted fill is hereinafter referred to as "earthwork."

2.03 TOPSOIL: Shall be as follows:

A. On-Site Topsoil: Topsoil shall consist of an average depth of six inches (6") of native surface soil left in place after the ground cover of herbaceous vegetation and other objectionable matter has been cleared as specified in Section 02100, "Site Preparation." Topsoil may be greater or less than the upper six inches (6") in depth. However, it must be removable without contamination by the subsoil or substratum or other objectionable matter that would render it as "unsuitable material" as described herein.
B. Off-Site Topsoil: Topsoil obtained from off-site locations, if required, shall contain no or minimal amounts of sod, brush, roots, trash or other deleterious materials. Topsoil shall not be contaminated with any toxic or caustic material. The longest dimension of rock particles shall be 1/2". Topsoil mixtures prepared by manufacturer's of such materials shall contain a minimum of 25% composted organic material and the remainder being a sandy loam topsoil material. The organic material shall be completely composted and have a pH of 8.2 or greater before incorporation into the topsoil. The topsoil material shall be tested for pH percentage of organic material and toxic and caustic substances before being incorporated into the project. A sample of the proposed imported topsoil shall be provided

by the Contractor and be approved by the Landscape Architect prior to using such soil.

2.04 IMPORTED FILL:

A. Imported fill materials shall be used for the construction of earth embankment in the event that (1) the volume of unclassified excavation is less than the volume of fill required for earth embankment and/or (2) the condition of materials removed in unclassified excavation makes them unsuitable for use in the construction of earth embankment.
B. The Contractor shall haul and place imported fill obtained from off-site sources as necessary to construct the embankment and various other details of the construction plans. All costs related to such imported fill will be included in the contract price, and no additional or separate payment for imported fill will be due the Contractor.
C. A sample of the proposed imported fill must be provided by the Contractor and be approved by the Architect/Engineer. In general, imported material must be equal to or better than native material in quality and engineering characteristics. The Architect/Engineer may also require the Contractor to provide a material analysis test of the proposed fill.

2.05 SELECT MATERIALS: Refer to Standard Specifications.

2.06 UNSUITABLE MATERIALS:

A. Topsoil, select material, imported fill, or unclassified fill will be declared as "unsuitable" by the Owner if, in his opinion, any of the following conditions or matter and particles are present to a degree that is judged detrimental to the proposed use of the material.
   1. Moisture
   2. Decayed or undecayed vegetation
   3. Hardpan clay, heavy clay, or clay balls
   4. Rubbish
   5. Construction rubble
   6. Sand or gravel
   7. Rocks, cobbles, or boulders
   8. Cementious matter
   9. Foreign matter of any kind
B. Unsuitable materials will be disposed of as "waste" as specified in Section 02100.
C. Wet Material: If fill material is unsatisfactory for use as embankment solely because of high moisture content, the Architect/Engineer may grant the Contractor permission to process the material to reduce the moisture content to a usable optimum condition.

PART 3 - EXECUTION

3.01 SITE PREPARATION: In general, "site preparation," as specified in Section 02100, shall be performed in advance of grading and earthwork operations and shall be completed over the entire area of earthwork operations.

3.02 TOPSOIL:

A. The removal and storage of topsoil from all areas of the site shall occur after site preparation is complete and before excavation and embankment construction begin. Likewise, topsoil will be replaced after excavation and embankment construction are complete.
B. Removal: Topsoil shall be stripped to an average depth of six inches (6") from areas where excavation and embankment construction are planned. Topsoil may be obtained from

greater depths if it is uncontaminated by the substratum and it is of good quality, in the opinion of the Architect/Engineer.

C. Storage: Topsoil shall be stored in stockpiles conveniently located to areas that will later receive the topsoil. Stockpiles shall be out of the way of earthwork operations in locations approved by the Owner or Architect/Engineer. Stored topsoil shall be kept separate from other excavated materials and shall be protected from contamination by objectionable materials that would render it unsuitable.

D. Timing: Topsoil will not be replaced (deposited) until construction activities are complete that would create undesirable conditions in the topsoil, such as overcompaction or contamination. Trenching for items such as electrical conduit and irrigation pressure lines must be complete before topsoil replacement may begin.

E. Replacement: Topsoil will be deposited in a single layer or lift. It will be placed, processed, compacted, and graded to leave a finished layer of topsoil not less than five inches (5") in depth. Unless otherwise indicated, topsoil will be replaced over all areas of earthwork (including slopes), except where pavement is planned.

F. Grading: Topsoil will be final graded to the elevations shown on the plans. Unless otherwise indicated, the final plane of compacted topsoil will be between 0.10 foot and one inch (1"0 below adjacent paved surfaces. Fine grading will be accomplished with a weighted spike harrow, weighted drag, tractor box blade, light maintainer, or other acceptable machinery. Grading operations and equipment will be such that topsoil does not become overcompacted. Bulldozer blades and front-end loader buckets are not acceptable devices for topsoil grading operations.

G. Acceptability: Finished areas of topsoil are satisfactory if they are true to grade, true in plane, even in gradient (slope), uniform in surface texture, and of normal compaction. Areas of loose granular pockets or of overcompacted soils are not acceptable and will be reworked. Finished areas will promote surface drainage and will be ready for turf grass planting.

3.03 UNCLASSIFIED EXCAVATION:

A. All excavated areas shall be maintained in a condition to assure proper drainage at all times, and ditches and sumps shall be constructed and maintained to avoid damage to the areas under construction.

B. Surplus Material:
   1. Surplus excavation is that quantity of material that may be left over after the grading plan is executed, and all earthwork operations, including excavation, embankment construction, topsoil replacement, and final grading, are completed. Unless otherwise specified, the Contractor shall dispose of surplus material as "waste" as specified in Section 02100.
   2. In certain cases, if the on-site excavation and embankment quantities are not balanced and there is a surplus of excavated material, the Architect/Engineer may permit the Contractor to "waste" the surplus by constructing additional embankment in an approved location. No additional payment for such work would be due that Contractor.

C. Excavation in Rock: The use of explosives will not be permitted unless specifically permitted in writing by the Owner. Unless otherwise indicated on the plans, excavation in solid rock shall extend six inches (6") below required subgrade elevation for the entire width of the area under construction and shall be backfilled with suitable materials as indicated on the plans.

3.04 EARTH EMBANKMENT:

A. Earth embankment is defined as embankment composed of suitable materials removed in unclassified excavation and/or imported fill. The construction of embankment includes

preparing the area on which fill is to be placed and the depositing, conditioning, and compaction of fill material.

B. General: Except as otherwise required by the plans, all embankment shall be constructed in layers approximately parallel to the finished grade of the graded area, and each layer shall be so constructed as to provide a uniform slope as shown on the grading plan. Embankments shall be constructed to correspond to the general shape of the typical sections shown on the plans, and each section of the embankment shall correspond to the detailed section or slopes established by the drawings. After completion of the graded area, embankment shall be continuously maintained to its finished section and grade until the project is accepted.

C. Preparation: Prior to placing any embankment, all preparatory operations will have been completed on the excavation sources and areas over which the embankment is to be placed. Stump holes or other small excavations in the limits of the embankments shall be backfilled with suitable material and thoroughly tamped by approved methods before commending embankment construction. The surface of the ground, including plowed, loosened ground, or surfaces roughened by small washes or otherwise, shall be restored to approximately its original slope by blading or other methods, and, where indicated on the plans or required by the Architect/Engineer, the ground surface, thus prepared, shall be compacted by sprinkling and rolling.

D. Scarification: The surface of all areas and slopes over which fill is to be placed, other than rock, shall be scarified to a depth of four inches (4") to six inches (6") to provide a bond between the existing surface and the proposed embankment. Scarification shall be accomplished by plowing, discing, or other approved means. The material that has been loosened shall be recompacted with the new embankment.

E. Benching: Scarification is normally adequate for sloping surfaces. However, in certain cases where fill is to be placed against hillsides or existing embankment with slopes greater than four to one (4:1), the Architect/Engineer may direct the Contractor to key the fill material to the existing slopes by benching. A minimum of two feet (2') normal to the slope shall be removed and recompacted to insure that the new work is constructed on a firm foundation free of loose or disturbed material.

F. Depositing: Fill material shall be placed in horizontal layers or lifts, evenly spread, not to exceed eight inches (8") in loose depth before conditioning and compaction. Unless otherwise permitted, each layer or fill material shall cover the length and width of the area to be filled and shall be conditioned and compacted before the next higher layer of fill is placed. Adequate drainage shall be maintained at all times.

G. Watering: At the time of compaction, the moisture content of fill material shall be such that the specified compaction will be obtained, and the fill will be firm, hard, and unyielding. Fill material which contains excessive moisture shall not be compacted until it is dry enough to obtain the specified compaction.

H. Compacting: Each layer of earth fill shall be compacted by approved tamping or sheepsfoot rollers, pneumatic tire rollers, or other mechanical means acceptable to the Architect/Engineer. Hand-directed compaction equipment shall be used in areas inaccessible to vehicular compactors.

I. Grading: Embankments shall be constructed in proper sequence and at proper densities for their respective functions. All embankment serves in one capacity or another as subgrade (e.g., under topsoil, under concrete and asphalt pavement, under structures, etc.). Accordingly, the upper layer of embankment shall be graded to within plus or minus 0.10 foot of proper subgrade elevation prior to depositing topsoil, and prior to the construction of pavements, slabs, etc.

3.05 SELECT EMBANKMENT: Select embankment is defined as embankment constructed of select fill material. In general, it is constructed the same as earth embankment, except as described below.

A. Subgrade: In cases where select fill is to be placed on a subgrade surface that is proposed to be within 0.50 foot in elevation of the existing surface grade, the top six inches (6") of soil shall be stripped and removed as unsuitable waste. A minimum of six inches (6") of fill comprising the subgrade for the select embankment shall be prepared and compacted as "earth embankment under select embankment" (see Density Control paragraph).
B. Mixing: If the select fill is non-uniform in material composition, the Contractor may elect to mix with discing or pulverizing machinery to ensure that it meets the specified density and material analysis testing requirements. During mixing, care shall be taken not to disturb the subgrade nor to incorporate the subgrade material into the select material. Mixing would occur between the depositing and watering steps described in the embankment construction process.

C. It is the sole responsibility of the Contractor to provide a select material of such quality that it can be "set-up" and "finished" to provide a stable support for the hot mix asphaltic concrete pavement. In addition to the density requirements, the subgrade must have sufficient strength at time of paving to support the proposed hot mix paving operation including paving machine, haul trucks, and rollers. If significant deterioration of the finished subgrade occurs during paving operations, paving shall be suspended until the required remedial action is taken by the Contractor. Approval of submitted samples of select material by the Architect/Engineer does not relieve the Contractor of this responsibility. All irregularities, depressions, or weak spots which develop in the subgrade shall be corrected prior to paving by scarifying the areas affected, adding suitable material as required, reshaping and recompacting by sprinkling and rolling. Should the select material subgrade, due to any reason or cause, lose the required stability, density, or finish before surfacing is complete, it shall be recompacted and refinished at the sole expense of the Contractor.

3.06 DENSITY CONTROL:

A. Earth Embankment in General: Earth embankment shall be compacted in lifts at eighty-eight percent (88%) to ninety-two percent (92%) of Standard ASTM D698 with plus or minus two (2) percentage points of optimum moisture content.
B. Earth Embankment Under Structures and Pavement: The top six inches (6") of natural earth comprising the subgrade for structural slabs or for areas of pavement shall be ninety-two percent (92%) to ninety-eight percent (98%) of Standard AASHTO Density with the moisture content of two percent (2%) to four percent (4%) above optimum. Sidewalks six feet (6') and less in width and individual paved areas less than one hundred fifty (150) square feet in surface area are excluded from this requirement.
C. Earth Embankment Under Select Embankment: The top six inches (6") of earth embankment under select embankment shall be ninety-two percent (92%) to ninety-eight percent (98%) of Standard AASHTO Density with the moisture content at two percent (2%) to four percent (4%) above optimum.
D. Select Embankment: The entire depth of select embankment shall be compacted in lifts to a minimum ninety-five percent (95%) of Standard AASHTO Density with the moisture content plus or minus two percent (2%) of optimum.

3.07 MOISTURE MAINTENANCE: The specified moisture content shall be maintained in all embankments that are to function as subgrade for structures, areas of pavement, or for select embankment. After completion of the embankment, the Contractor shall prevent excessive loss of moisture in the embankment by sprinkling as required. Loss of moisture in excess of two percent (2%) below optimum in the top twelve inches (12") of the fill will require that the top twelve inches (12") of the embankment be scarified, wetter, and recompacted prior to placement of the structure, select fill or pavement. If desired, the

Contractor may place an asphalt membrane of emulsified or cutback asphalt over the completed embankment and thus eliminate the sprinkling requirement.

3.08 TESTING: Spot field tests of embankment densities shall be performed as dictated by the Owner at the place and time of the Owners choosing. Any area not meeting density control requirements shall be immediately excavated, reconstructed, and retested, at the expense of the Contractor, until satisfactory results are obtained.

3.09 BALANCING: Balancing within the confines of the Josey Ranch Field 6 site is not feasible. The Contractor will be required to remove excess excavation.

3.10 LINES AND GRADES:

A. Final lines, grades, and elevations shall be established on the site by Contractor and approved by the Owner. If any stakes showing final lines and grades are removed or destroyed by the contractor, replacement of the stakes shall be at the Contractor's expense.
B. All filled and excavated areas shall be brought to final line and grade within plus or minus 0.1 foot by rough grading. Grades not otherwise shown shall be uniform levels or slopes conforming to adjacent graded areas.
C. Any and all blue topping that may be required shall be done at Contractor's expense.

3.11 COLD WEATHER PROTECTION: Protect excavated surfaces which will receive fill from freezing when atmospheric temperature is less than 35 degrees Fahrenheit. Protection may consist of a loose soil layer, mulch, or other approved means. The protective layer shall be removed prior to placement of fill.

3.12 EROSION CONTROL: Until final completion and acceptance of the project the Contractor shall be responsible for erosion control and shall correct and remedy any areas affected by erosion prior to final completion. After final acceptance of the work the Owner shall be responsible for erosion control.

3.13 FINE GRADING: The Contractor shall be responsible for obtaining the City's approval on all grading. Do not leave stones or materials in excess of one-half inch (1/2") in the longest dimension. Finish grade shall be within a tolerance of $\pm$ .04 foot of plan grades/elevations.

(End of Section)

SECTION 02215 – FINE GRADING: LANDSCAPE

PART 1 - GENERAL

1.1 SECTION INCLUDES:

A Furnish all labor, material, equipment, related services and supervision necessary for or incidental to fine grading all disturbed areas within the limits of work as shown or indicated on the Drawings and/or as specified.

1.2 RELATED DOCUMENTS:
All other Divisions of the Contract Documents. Refer to each Division's specifications and drawings for all requirements, including but not limited to the following:

1. Turf Establishment – Section 02930
2. Earthwork (Site) – Section 02201

PART 2 - PRODUCTS

2.1 LIMITS OF WORK:

A. The areas to be fine graded are all those turf and landscape areas as delineated on the construction documents.

2.2 SEQUENCE OF WORK:

A. Fine grading of the turf and landscape areas shall not commence until the Owner's Representative has reviewed the subgrade and granted separate written permission for the placement of the topsoil, if required. Permission to proceed with the placement of the topsoil neither constitutes approval of the subgrade nor alleviates the Contractor of his responsibility.
B. Fine grading will not be attempted until all construction involving heavy equipment and vehicles is complete.
C. Fine grading shall be performed in compliance with the specifications. All elevations must be within 0.1 feet of the grades indicated on the plans, if a grading plan is provided. The surface shall have a consistent unwavering slope in all aspects/directions of the plane. Visual dips, depressions, ridges, rils, humps, etc. are not acceptable. The General Contractor, Landscape Architect and Owner's Representative will conduct an on-site visual inspection after the Contractor has indicated that fine grade has been achieved. Any deficiencies noted must be corrected by the Contractor.
D. After fine grading is accomplished, it shall be the Contractor's responsibility to protect all fine graded areas from vehicular traffic or other disruptive activities. Damages to the fine graded surfaces will be restored to a satisfactory condition as prescribed herein until the job is completed and accepted by the Architect and the Owner.
E. It is critical that all of the above outlined earthwork procedures be strictly followed to ensure an acceptable surface in the turf and landscape areas; therefore, work progressing without proper approval as delineated for each phase shall be subject to complete removal with no adjustment in price or contract time.

2.3 FINE GRADING OPERATIONS:

A. The following measures will be executed in the accomplishment of fine grading areas to be planted in turfgrass. The Contractor may elect to use additional or supplemental measures to accomplish fine grading.
   1. Fine grading will be executed with any or all of the following or other appropriate machinery: lightweight road grader, tractor box blade, discing machinery, weighted spike harrow, and weighted drags. Bull Dozer blades or front end loader buckets are not acceptable devices for fine grading operations.
   2. It is anticipated that some areas of earth embankment and high traffic areas may become overcompacted and resistant to proper grading. Such areas will be loosened and pulverized with discing machinery and will then be recompacted to normal density before fine grading. The use of a watering truck to moisten dried and hardened areas may be necessary.

2.4 ACCEPTABILITY:

A. The Architect will determine if fine graded areas are acceptable. Areas deemed unacceptable will be corrected and re-graded until they are acceptable. Architect's acceptance of the finish surface does not alleviate the Contractor of his responsibility to comply with the specifications.
B. Work progressing without proper approval for each phase of the earthwork operations shall be subject to complete removal.

PART 3 - EXECUTION

3.1 INSPECTION:

A. Examine areas and conditions under which fine grading is to be performed and notify Owner/Architect of conditions detrimental to the proper and timely completion of the work.

3.2 PREPARATION:

A. Provide adequate protective measures of shoring, bracing, piling, planking and cribbing to protect existing adjacent construction.
   1. Protect all reference points, benchmarks and monuments from dislocation or damage. Replace or repair immediately any points damaged, destroyed, or dislocated.
   2. Sprinkle and dampen all dusty material from the beginning of work to its completion.
   3. Protect and maintain all conduits, drains, inlets, sewers, pipes and wires that are to remain.
   4. Provide, erect and maintain all lights, barricades, warning signs and guards as necessary.
B. The Contractor shall layout all work required and is responsible for all elevations, dimensions and verification of actual conditions. Refer discrepancies to the Architect for interpretation or required modifications.
C. Remove grass, weeds, trees, shrubbery, roots and other vegetation from the areas to be fine graded. Tree roots of protected trees shall not be disturbed. Contractor shall remove vegetation and organic matter by hand labor in tree root zone areas. Coordinate work with Architect in tree root zone areas.

3.3 PUMPING AND DRAINAGE:

A. Keep fine graded areas free from water, ice and snow at all times. Prevent water from interfering with progress or quality of the work.

3.4 RECONDITIONING FINISHED GRADE:

A. Where approved grades are compacted or disturbed by Contractor's subsequent operations or adverse weather, the finished grades shall be scarified and re-graded as specified herein prior to further construction thereon.

3.5 GRADING:

A. Establish grades, if grading plan is provided, by means of grade stakes placed as required. Hold down subgrade to allow depths required for approved topsoil and compost placement, if required.
B. Fine grade to the elevations required by the drawings and specifications.
C. Imported topsoil, if required, will be furnished by the Contractor and installed in the areas as indicated on the plans.
D. Finish grade to the elevations required by the drawings and for proper drainage. At intermediate points, for which finish grades are not indicated, the finish grade shall be of uniform level of slope between points for which elevations are given. Provide a smooth gradient transition at any abrupt changes in elevation.

3.6 ADJUSTMENTS AND CLEANING:

A. Settlement or washing that occurs in fine graded areas prior to acceptance of work shall be repaired and grades re-established to the required elevations and slopes.
B. Cleanup all debris caused by the work of this section, keep the site clean and neat at all times.

(End of Section)

SECTION 02930 -- Turf Establishment

PART 1 - GENERAL

1.01 DESCRIPTION: Work included: This work involves various operations necessary to provide and establish a turf-bed in accordance with the plans and specification contained herein.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

(1) Earthwork – Site Section 02201
(2) Fine Grading: Landscape – Section 02215

1.03 QUALITY ASSURANCE:

A. Qualifications of workmen: Provide at least one person who shall be present at all times during execution of this portion of the Work, who shall be thoroughly familiar with the type of materials being installed and the proper materials and methods for their installation, and who shall direct all work performed under this section.
B. Standards: All seeds, sod and other plant material shall meet or exceed the specifications of Federal, State, and County laws requiring inspection for plant disease and insect control.

1.04 SUBMITTALS:

A. Materials lists: Within 45 days after award of the Contract, submit a complete list of all materials proposed to be furnished and installed under this Section, demonstrating complete conformance with the requirements specified.
B. Certificates: Deliver certificates for all materials to be used to the Landscape Architect.

1.5 PRODUCT HANDLING

A. Deliver all items to the job site in their original containers with all labels intact and legible at time of Landscape Architect's inspection.
B. Immediately remove from the site all materials which do not comply with the specified requirements.
C. Use all means necessary to protect plant materials/seeds before, during, and after installation and to protect the work and materials of all other trades.
D. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Landscape Architect and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. HERBICIDE: "Round Up" or approved equal
B. GRASS SOD: Common Bermuda grass and/or Tiff Tuff Bermuda grass and/or 'Prairie' Buffalo grass - Sod shall be free of all debris, weeds, and have been regularly maintained prior to cutting. Within one hour after being cut, the sod shall be rolled or stacked. Precautions shall be taken to prevent damage from heat or inadequate moisture. Sod cut more than 18 hours shall not be used and discarded offsite. Sod shall be cut at a sufficient thickness to allow 1/4" to 1/2" of soil to remain intact on each piece of sod.

C. GRASS SEED: Common Bermuda grass (Cynodon Dactylon), hulled, 82% pure live seed 'Topgun' Buffalo Grass (Buchloe dactyloides 'Topgun') Topgun primed KNO3 Certified as distributed by Bamert Seed Company Muleshoe, Texas; 806-272-5506 or cereal rye grass seed (Secale cereale). See plan for location of seed type. All grass seed shall be free from noxious weeds, grade A recent crop, recleaned, and treated with appropriate fungicide at time of mixing. Seed shall be furnished in sealed, standard containers, which shall be retained by the Contractor for inspection. Copies of the official seed analysis or official seed tags shall be furnished to the Landscape Architect.

D. MULCH: Conwed regular wood fiber mulch or approved equal

E. FERTILIZER: Mississippi Chemical 18-18-5, water soluble, or an approved equal

F. FIBER TACK: Apply with hydromulch on all berms or slopes greater than six (6) feet horizontal to one (1) foot vertical at the rate of one and one-half (1 ½") pounds of Fiber Tack per one thousand (1,000) square feet.

PART 3 - EXECUTION

3.01 INSPECTION:

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

B. Areas to be hydromulched/seeded are under automatic or manual irrigation. Locations of irrigation heads, valves, electric junction boxes, etc. will be determined by the Contractor and flagged to prevent damage.

3.02 CLEARING:

A. Prior to grading and tilling, vegetation that may interfere with operations shall be mowed, grubbed, and raked. Machinery, equipment, trucks or personal passenger vehicles shall not be driven, parked or stored under the canopy of existing trees. The surface on the entire area to be turfed shall be cleared of stumps, stones, roots, debris, wire, and other materials that might hinder the work or subsequent maintenance. The collected material shall be removed from the site.

3.03 SPREADING OF TOP SOIL

A. Finish grading will be performed in compliance with Section 02201.

B. Fine grading: Upon completion of finish grading, perform all fine grading required in the planting areas, using top soil obtained from the site

C. During the fine grading operations, all swales shown on the grading plan and additional swales that may be required to drain areas shall be completed. All grade adjustments shall be made so there are no areas that will have standing water.

D. Immediately install the lawn upon the completed and accepted fine grade.

3.04 PLANTING BED PREPARATION (BERMUDA, BUFFALO GRASS, AND RYE):

A. **Two weeks prior to application, the areas to be sodded, hydromulched, broadcast seeded, and/or drill seeded is to be treated with a post emergent herbicide at a rate recommended by the manufacturer.**

B. Disk area to be sodded, hydromulched, broadcast seeded and/or drill seeded to a 4" min. depth, then cultivate with weighted spike tooth harrow or rake. Drag area until level and smooth, removing high areas and filling depressions. If area becomes compacted during harrowing and smoothing processes it shall be retilled to the specified depth and reharrowed to achieve an acceptable soil bed.

C. Remove debris and rocks. Clods of soil in excess of 1" which have not been softened by irrigation or broken by the aforedescribed cultivation practices shall be

removed from the seed bed.

D. When preparation is complete, contractor will request Landscape Architect to make inspection of site to determine acceptability before starting hydromulch/drill seeding application.

3.05 SOLID SODDING APPLICATION

A. Prior to placing the solid sod, the turf bed shall be sufficiently watered to wet the soil surface and eliminate scalding of the roots at the base of the solid sod.

B. Sod shall be placed in rows or strips. On slopes and in swales, the strips shall be placed at right angles to the flow of water. Sod pieces shall be placed tightly against each other with joints staggered at least one foot.

C. Contractor shall roll the sodded area with a hand pulled roller to ensure that all gaps and spaces are eliminated between sod bed and sod.

D. Set frequency and duration of water times to completely wet the sod and sod bed without hampering future or existing operations.

3.06 APPLICATION:

A. TIMING

1. Bermuda grass hydromulch or drill seeding shall not be applied prior to May 1 nor after August 15 or at anytime the soil temperature is less than 70 degrees F.
2. Buffalo Grass drill seeding shall not be applied prior to April 1 nor after August 1 or at anytime the soil temperature if less than 60 degrees F.

B. Application Rates

1. Application Rate: Hydromulch (Bermuda)
   a) Common Bermuda grass @ 2 1/2 lbs/1000 S.F.
   b) Mulch @ 60 lbs./1000 S.F.
   c) Fertilizer @ 25 lbs./1000 S.F.

   Typical mix for 800 gallon tank with coverage not to exceed 6,000 S.F. shall consist of 15 lbs. of common Bermuda grass seed, 360 lbs. of Conwed mulch, and 150 lbs. of 18-18-5 fertilizer.
2. Application Rate: Drill Seed (Bermuda)
   a) Common Bermuda grass @ 2 1/2 lbs/1000 S.F.
   b) 15-5-10 Granular Fertilizer @ 25 lbs./1000 S.F.
3. Application Rate: Drill Seed (Buffalo Grass)
   a) "Topgun" Buffalo Grass @ 3 1/2 lbs/1000 S.F.
   b) Do not apply fertilizer during first year of growth
4. Application Rate: Drill Seed (Cereal Rye)
   a) Annual Cereal Rye grass @ 15 lbs/1000 S.F.
   b) 15-5-10 Granular Fertilizer @ 20 lbs/1000 S.F.

C. Set frequency and duration of watering times to provide water to newly seeded areas without hampering future operations. Watering of Buffalo Grass for establishment is critical as excess water is detrimental to the plant and conducive to weed growth which further impairs the plants. For germination of Buffalo Grass water lightly and frequently several times daily to prevent the top of soil from drying out. When grass is 1" tall decrease frequency every 2 to 3 days and increase depth of watering for the next week. Water one the following week. After that water only when the top three inches of soil are dry, but soak the soil thoroughly. This watering schedule is intended only as a rough guide as weather conditions vary greatly through the course of the growing season and soil conditions vary greatly from site to site.

D. Reserved

E. Drill Seeding - Seed shall be uniformly distributed over area shown on the plans.

Seed shall be applied using a Brillion seeder (or approved equal) with a maximum spacing of 2" between seed rows. The contractor must provide seed coverage as provided under 3.08.

3.07 CLEAN-UP:

A. Remove all debris from site, clean walkways, repair ruts, and any other damage resulting from turf establishment operations.

3.08 COVERAGE:

A. Contractor shall be responsible for total coverage of all areas delineated on the plans for turf establishment. Bare areas in Bermuda grass and Buffalo Grass turf in excess of twelve square inches (i.e. 3" X 4") resulting from unequal seed distribution, lack of germination, erosion, or other causes shall be reseeded per the original specifications. Rye grass turf shall have the same requirements relative to bare areas, with the additional stipulation that rye grass plants must exist in sufficient quantity (Approx.75 plants/12" square area) to comply with specifications.

3.09 GUARANTEE:

A. Coverage will be complete; areas of ungerminated seed twelve square inches (i.e. 3" X 4") and larger will be reseeded.
B. Repair any damage made during reseeding immediately.

3.10 MAINTENANCE:

A. After hydromulching or drill seeding maintain the lawn area and keep constantly moist until a stand of grass is present. Maintenance shall consist of watering, replanting, mowing, maintaining existing grades, and repair of erosion damage.
B. Maintenance watering shall consist of daily watering. Maintenance watering shall be applied each day over the entire planted area until the soil is thoroughly wet to a depth of two (2) inches as determined by the Landscape Architect. During periods of effective rainfall, watering shall be discontinued but shall be promptly resumed when required.
C. Vegetation in lawn areas shall be kept under control by mowing. Any time that the vegetation growth reaches a height of three (3) inches, the areas shall be mowed. Mowing shall be done with approved mowing machines in such manner that will leave a vegetation height of two (2) inches.
D. Areas on which a stand of growing grass is not present within four weeks of planting shall be reseeded as specified for the original planting unless lack of growth is due to adverse and unusual weather conditions. These said areas shall continue to be replanted until a viable stand is obtained. A stand shall be defined as live specified grass plants from seed occurring at the rate of not less than forty (40) growing plants per square foot. The aforementioned forty growing plants must be evenly distributed throughout the square foot area.

(End of Section)

SECTION 03101 -- Concrete Formwork (Site)

PART 1 - GENERAL

1.01 DESIGN

A. Formwork shall be designed and engineered by the Contractor to support all loads without distortion or excessive deflection. Conform to the requirements of ACI 547, "Recommended Practice for Concrete Formwork."

1.02 COORDINATION

A. Notify other trades and coordinate installation of anchor bolts, sleeves, hangers, conduits, inserts and etc.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Wood Forms for exposed surfaces shall be constructed of smooth face, 5 plyform plywood.
B. Metal Forms shall be clean and in good condition. Damaged or indented forms will not be accepted.
C. Form Oil shall be non-staining paraffin base oil.
D. Chamfer Strips shall be wood or vinyl.

PART 3 - EXECUTION

3.01 GENERAL

A. Construct forms to conform to required shapes, lines and dimensions, and to produce concrete surfaces free of objectionable form marks.
B. Install chamfer strips at external corners and other locations indicated on drawings. Install inserts, bolts, hangers, sleeves and etc.
C. Coat the contact surface of wood forms for unexposed surfaces with form oil prior to placement of reinforcing.

3.02 REMOVAL OF FORMS

A. Forms shall not be removed until the concrete develops sufficient strength to support its own weight plus the superimposed loads.

(End of Section)

SECTION 03201 -- Concrete Reinforcement (Site)

PART 1 - GENERAL

1.01 SUBMITTAL

A. Shop Drawings: Submit shop drawings in quadruplicate indicating location, size, bending and spacing of reinforcement.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Reinforcing Bars: Shall be of domestic manufacture conforming to the requirement of "Specifications for Billet-Steel Concrete Reinforcing Bars", ASTM A 615, Grade 40 or 60 as noted on drawings. Bars shall be millmarked by stamping or by rolling impression designating the type of steel.
B. Welded Wire Fabric: Shall conform to ASTM A185.
C. Concrete Accessories: bar supports, chairs, spacers, etc., shall conform to requirements of A.C.I. Standard 315. Supports at exposed surfaces shall be galvanized or plastic coated. Supports for bars in slabs on fill shall be sand chairs with welded plates on bottom or plastic chairs.

PART 3 - EXECUTION

3.01 GENERAL

A. Detailing, fabricating, placing and supporting shall be in accordance with A.C.I. 308-71. Bars shall be bundled and tagged for specific location.
B. Bending: Bars shall be bent cold. Heating of reinforcing not permitted.

3.02 CLEANING

A. Reinforcing shall be cleaned of rust, scale, dirt, oil, or other coatings which would reduce bonding.

3.03 PLACING

A. Reinforcing shall be accurately placed and securely saddle tied at every other intersection with No. 18 gauge black annealed wire. Support in proper position with metal or plastic chairs, spacers or wire ties prior to placing concrete.

3.04 CONCRETE PROTECTION

A. Clear minimum coverage of concrete over reinforcing bars shall be:
   1. Slabs poured over earth - 3 inches
   2. Sides of beams exposed to weather or in contact with ground - 2 inches
   3. Beam bottom against carton forms - 2 inches
   4. Formed beams, columns & girders - 1 1/2 inches
   5. Top & bottom of formed slabs & joists - 3/4 inches

3.05 DOWELS AND SPLICING

A. Dowels shall be same size and spacing as adjoining main bars, minimum.
B. Bars shall be lapped 40 diameter at splices; maintain 24 inch minimum lap.
C. Provide corner bars in all beams of same size as beam reinforcing. Lap 30 bar diameter.

(End of Section)

SECTION 03301 -- Cast-In-Place Concrete (Site)

PART 1 - GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE:
- A. Section 03101 - Concrete Formwork
- B. Section 03201 - Concrete Reinforcement

1.01 QUALITY ASSURANCE:

The following standards shall be considered as minimum and referenced Specifications are hereby made a part of this Project Specification.
- A. ACI 301 Specifications for Structural Concrete for Buildings.
- B. ACI 318 Building Code Requirements for Reinforced Concrete.
- C. ACI 613 Recommended Practice for Selecting Properties for Concrete.
- D. ACI Comm. 621 Selection and Use of Aggregates for Concrete.
- E. ACI Manual of Concrete Inspection SP-2.
- F. ACI 614 Recommended Practice for Measuring, Mixing and Placing Concrete.
- G. ASTM C33 Standard Specifications for Concrete Aggregate.
- H. ASTM C94 Standard Specification for Ready-Mixed Concrete.
- I. ASTM C150 Standard Specification for Portland Cement
- J. ASTM C260 Standard Specification for Air-Entraining Admixtures for Concrete.
- K. ASTM C494 Standard Specification for Chemical Admixtures for Concrete.
- L. Except as modified, ACI 301 shall generally apply to all concrete work. Latest edition of each of above Specifications shall govern.

1.02 SUBMITTALS:

Proposed concrete mix design for each separate class of concrete shall be submitted by the Contractor for review and approval by Architect.

1.03 ALLOWABLE TOLERANCES:

Except when close coordination and fitting of various trades' work precludes allowance of tolerance, maximum total permissible deviations from established lines, grades and dimensions shall be as stated herein below. Set and maintain forms in such a manner as to ensure completed work within specified tolerance limits.
- A. Variation from the Plumb: In lines and surfaces of columns, piers, walls and in arises: In 10 ft. - 1/4 in.
- B. Variations from the Level or from Indicated Grades: In structural concrete floor (before removal of supporting shores), ceilings, beam soffits and arises: In 10 ft. - 1/4 in.
- C. Variations of Related Position of Columns, Walls and Partitions in any Bay or 20 ft. maximum: 1/4 inch.
- D. Variations in Sizes and Locations of Sleeves, Floor Openings and Wall Openings: 1/4 inch.
- E. Variations in Cross Sectional Dimensions of Columns and Beams and in Thickness of Slabs and Walls: 1/4 inch.
- F. Variations in Footings:
  1. Variations in dimensions of plan: Minus - 1/2 inch, Plus - 2 inches (applies to concrete only).
  2. Misplacement or eccentricity: Two percent of footing width in direction of misplacement, but not more than 2 inches. (Concrete only).
  3. Reduction in Thickness: Minus - 5 percent of specified thickness.

1.05 CONCRETE TEMPERATURES:

A. Generally, methods for hot-weather concreting and winter concreting shall conform to ACI Standard Recommended Practice for Hot Weather Concreting (ACI 605), and ACI Standard Recommended Practice for Winter Concreting (ACI 604), and amendments thereto as hereinafter specified.

B. The use of calcium chloride in concrete is prohibited, ACI 604 to the contrary notwithstanding.

C. When air temperature at site of work falls below 40 degrees F., or is expected to fall below 40 degrees F. within ensuing 24 hours, heat mixing water and/or aggregates prior to placing in mixer, so that temperature of mixed concrete shall not be less than 60 degrees F. nor more than 90 degrees F.

D. Heat aggregate either by steam or dry heat. Heating apparatus shall be of such type that it will heat the mass uniformly and in such manner as to preclude possible occurrence of overheated areas or hot spots.

E. During cold weather, maintain aggregates, forms and reinforcing steel free from ice and snow, and protect area where concrete is being placed from weather during and after placing of concrete. Use only approved methods of heating materials and protecting concrete.

F. In extremely hot weather, and with use of relatively hot materials, temperature of concrete may be excessive. In no case will the use of concrete having a temperature in excess of 90 degrees F. be permitted. Cooling of water and/or aggregates will be required if concrete temperatures rise above this limit.

PART 2 - MATERIALS

2.01 PORTLAND CEMENT: ASTM C150, Type I or III.

2.02 AGGREGATES:

A. Coarse Aggregate: ASTM C33

B. Fine Aggregate: ASTM C33

C. Lightweight Coarse Aggregate: Shall be a lightweight cellular and granular inorganic material of expanded shale or clay conforming to ASTM C330. Dry loose weight shall not be less than 35 nor more than 55 lbs./cu. ft.

D. Aggregate for Exposed Aggregate Concrete: Native aggregate; maximum size 3/4" diameter.

2.03 WATER:

Potable, clean, free of oil, acid and other injurious amounts of vegetable matter, alkalies, or other salts.

2.04 ADMIXTURES:

A. Air Entraining: Conform to ASTM C260

B. Chemical: Conform to ASTM C494 and type as recommended by manufacturer for use as related to temperature, humidity at wind conditions at site at time of pouring.

C. No calcium chloride shall be allowed as an admixture in any concrete in this Project.

D. Fly ash shall not be allowed as an admixture in concrete used in this project.

2.05 CURING COMPOUND:

Kure-N-Seal by Sonneborn.

2.06 CURING PAPER: Conform to ASTM C171.

2.07 FLOOR SEALER:
Kure-N-Seal by Sonneborn.

2.08 FLOOR HARDENER:
LAPIDOLITH by Sonneborn.

2.09 NON SHRINK GROUT:
Embeco 153 grout.

2.10 SURFACE RETARDANT:
SIKA Rugasol - S/C.

PART 3 - EXECUTION

3.01 PROPORTIONING:
Except as otherwise specified herein, concrete shall conform to requirements of ACI 301, Chapter 3. Intent of Specifications is to secure for every part of work, structural concrete of homogeneous structure, which when hardened will have required strength and resistance to weathering.

A. Concrete type: As shown on Drawings.
B. Compressive Strengths: Strengths of concrete required, based upon 28 day PSI compressive strength requirements, shall be as shown on Drawings.
C. Chemical Admixtures: All concrete shall contain a chemical admixture used in accordance with manufacturer's recommendations.
D. Air Entraining Admixture: All concrete shown on the Drawings to have air entraining admixture used in accordance with manufacturer's recommendations and the following table:

Nominal Maximum Size of Coarse Aggregates, In.	Total Air Content Percent by Volume
3/8	6 to 10
1/2	5 to 9
3/4	4 to 8
1	3.5 to 6.5
1-1/2	3 to 6

E. Calcium Chloride: Not permitted in mix.
F. Fly Ash: Not permitted in mix.

3.02 MIXING:
Except as otherwise specified herein, mixing of concrete shall conform to ACI 301, Chapter 7 and shall be Transit-Mixed Concrete. All equipment, operations, etc., shall meet requirements of ASTM Designation C94. Delivery of concrete shall be scheduled so that continuity of a pouring operation is not interrupted for more than 15 minutes from the time that one truck is emptied until another truck is in position to continue pouring operation. In event of violation of this requirement during a pour, Architect or his representative, may direct concrete to be ordered immediately from other sources at Contractor's expense. Plant shall deliver certificates to Architect for each batch delivered stating exact amount of each ingredient therein.

3.03 PLACING:

Except as otherwise specified herein, placing of concrete shall conform to ACI 301, Chapter 8.

A. Placing Time: For standard weight concrete, the elapsed time be-tween proportioning of materials (including cement) and placing of concrete in its final position shall in no case exceed 90 minutes for concrete containing Type I cement.

B. Before depositing concrete, remove debris and excess water from spaces to receive concrete; wet or oil forms as directed; divert any flow of water away from excavations and forms.

C. Convey from mixer to forms immediately by means of equipment of size and design to avoid segregation. Deposit in final position. Maximum drop of chutes, 5 feet. Chutes; metal or metal lines. Minimum slopes of chutes one vertical or two horizontal. Provide baffle plate and spout or tremes to prevent segregation. Provide hopper when operation is intermittent, and when length of chutes exceeds 20 feet.

D. Deposit continuously and in layers of such thickness that no concrete will be deposited on concrete that has hardened sufficiently to cause formation of seams and planes of weakness within sections. Otherwise, form construction joints at such points and in manner directed. Compact by spading, rodding, forking, or mechanical means so that concrete is thoroughly worked around the reinforcement, around embedded items, and into corners of forms, eliminating all air or stone pockets which may cause honeycombing, pitting, or planes of weakness.

E. When depositing new concrete against old, clean and thoroughly wet old surfaces and cover with an approved bonding agent, mortar, or neat cement grout. Pour new concrete before grout sets.

F. Prior to pouring concrete into permanent-type metal forms, wet forms and sprinkle entire form area with heavy coat of neat Portland cement.

G. Weather Conditions: Refer to "Concreting Temperatures."

H. No concrete shall be placed during rain, sleet or snow, unless approved by Architect.

I. Concrete shall be consolidated by the use of vibrators in accordance with ACI 609. Vibration must be in direct action in the concrete and not against forms or reinforcement. Concrete shall be vibrated until the water shows indications of rising, but not until the water has risen. Vibrators shall not be used to transport concrete laterally within the forms or footings. A spare vibrator shall be kept at the project site during all concrete placement operations.

J. Notify Architect at least 24 hours PRIOR to placing of any concrete. The placing of concrete before such notice is given and/or before review by the Architect, is a valid reason for rejecting so placed concrete.

3.04 CURING AND PROTECTION:

Except as otherwise specified herein, concrete curing and protection shall comply with requirements of ACI 301, Chapter 12.

A. Maintain all concrete surfaces of every description in thoroughly wet condition during working and non-working hours for minimum of 7 days after pouring. Cover with unsized burlap, and keep burlap thoroughly soaked with water at all times during every day of curing period. Option: surfaces may be cured with specified curing compound in lieu of water curing when they are not to receive finishes requiring bonding and/or adherence to concrete.

B. When prevailing or anticipated air temperatures can be expected to exceed 85 degrees F. for a period in excess of 48 hours after steel troweling is completed, in lieu of any other type of curing it will be mandatory that curing of steel-troweled finishes be executed by covering surfaces with a layer of unsized burlap which shall be maintained in a thoroughly wet condition at all hours during every day of curing period; or surfaces may be "diked" with clean sand and be "ponded" with clean water.

C. Duration of Curing: The final curing shall continue until the cumulative number of days or fractions thereof, not necessarily consecutive during which the temperature of the air in contact with the concrete is above 50 degrees F. has totaled 7 days. If high early strength concrete has been used, the final curing shall continue for a total of 3 days. Rapid drying at the end of the curing period shall be prevented.

D. Formed Surfaces: Steel forms heated by the sun and all wood forms in contact with the concrete during the final curing period shall be kept wet. If forms are to be removed during the curing period, one of the curing materials or methods shall be employed immediately. Such curing shall be continued for the remainder of the curing period.

E. Temperature:

1. Cold Weather: When the mean daily temperature of the atmosphere is less than 40 degrees F. the temperature of the concrete shall be maintained between 50 degrees and 70 degrees F. for the required curing period. When necessary, arrangements for heating, covering, insulation, or housing the concrete work shall be made in advance of placement and shall be adequate to maintain the required temperature and moisture conditions without injury due to concentration of heat.
2. Hot Weather: When necessary, arrangements for installation of windbreaks, shading, fog spraying, sprinkling, ponding or wet covering of a light color shall be made in advance of placement, hardening and finishing operations will allow.
3. Excessive Temperature Changes: Changes in temperature of the concrete shall be as uniform as possible and shall not exceed 5 degrees F. in any 1 hour or 50 degrees F. in any 24 hour period.

F. Protection from Mechanical Injury: During the curing period, the concrete shall be protected from damaging mechanical disturbances, particularly loaded stresses, heavy shock, and excessive vibration. All finished concrete surfaces shall be protected from damage caused by construction equipment, materials, or methods, and by rain or running water. Self supporting structures shall not be loaded in such a way as to overstress the concrete.

3.05 ACCEPTANCE OF STRUCTURE:

Except as otherwise specified herein, acceptance of structure shall be based on conditions specified in ACI 301, Chapter 18.

A. If concrete fails to meet compressive strength requirements of this Project Specification, additional curing as specified by the Architect may be required and modifications may be required in the concrete mix design for the remaining concrete work, at expense of Contractor.

B. The strength of the structure in place will be considered potentially deficient if it fails to comply with any requirements which control the strength of the structure, including but not necessarily limited to the following conditions:

1. Low concrete strength as evaluated by Chapter 17 ACI 301.
2. Reinforcing steel size, quantity, strength, position or arrangement at variance with the requirements of Chapter 5 or the Project Drawings.
3. Concrete which differs from the required dimensions or location in such a manner as to reduce the strength.
4. Curing less than that specified.
5. Inadequate protection of concrete from extremes of temperature during early stages of hardening and strength development.
6. Mechanical injury as defined in the Project Specification, construction fires, accidents or premature removal of formwork likely to result in deficient strength.

7. Poor workmanship likely to result in deficient strength.

C. If a structural analysis by the Architect/Engineer indicates the completed structure will be suitable for its intended use, it may be accepted.

D. Concrete work judged inadequate by structural analysis or by results of a load test shall be reinforced with additional construction if so directed by the Architect/Engineer, or shall be replaced, at the Contractor's expense.

E. The Contractor shall pay all costs incurred in providing the additional testing required by this Chapter if any requirement affecting the strength of the structure was not met. The Owner will pay all costs incurred in providing the additional testing required by this Chapter if all requirements affecting the strength of the structure have been met.

3.06 REPAIR OF SURFACE DEFECTS:

After forms are removed, joint marks, fins, honeycombed areas, bulges, depressions, etc., on all concrete surfaces shall be removed and/or filled, leaving a smooth, dense and true surface.

A. Defective Areas:

1. All honeycombed and other defective concrete shall be removed down to sound concrete. The area to be patched and an area at least 6 inches wide surrounding it shall be dampened to prevent absorption of water from the patching mortar. A bonding grout shall be prepared using a mix of approximately 1 part cement to 1 part fine sand passing a No. 30 mesh sieve, shall be mixed to the consistency of thick cream and shall then be well brushed into the surface.
2. The patching mixture shall be made of the same material and of approximately the same proportions as used for the concrete except that the coarse aggregate shall be omitted and the mortar shall consist of not more than 1 part cement to 2-1/2 parts sand by damp loose volume. White Portland cement shall be substituted for a part of the gray Portland cement on exposed concrete in order to produce a color matching the color of the surrounding concrete, as determined by a trial patch.
3. The quantity of mixing water shall be no more than necessary for handling and placing. The patching mortar shall be mixed in advance and allowed to stand with frequent manipulation with a trowel, without addition of water, until it has reached the stiffest consistency that will permit placing.
4. After surface water has evaporated from the area to be patched, the bond coat shall be well brushed into the surface. When the bond coat begins to lose the water sheen, the premixed patching mortar shall be applied. The mortar shall be thoroughly consolidated into place and struck off so as to leave the patch slightly higher than the surrounding surface. To permit initial shrinkage, it shall be left undisturbed for at least 1 hour before being finally finished. The patched area shall be kept damp for 7 days. Metal tools shall not be used in finishing a patch in a formed wall which will be exposed.

B. Tie Holes: After being cleaned and thoroughly dampened, all tie holes shall be filled solid with patching mortar.

C. Proprietary Materials: Approved proprietary compounds for adhesion or as patching ingredients may be used in lieu of or in addition to the foregoing patching procedures. Such compounds shall be used in accordance with the manufacturer's recommendations, after approval by Architect.

3.07 FINISHING OF FORMED SURFACES:

Except where otherwise specified herein, formed surfaces shall be finished in accord with Chapter 10 of ACI 301.

A. Rough or Board Form Finish: For all concrete surfaces not exposed to view in

completed work, provide as-cast, rough or form finish. Surfaces shall be true to line and plane. Tie holds and defects shall be patched, and fins exceeding 1/4 inch in height shall be rubbed down. Otherwise, surfaces shall be left with texture imparted by forms.

B. Grout Cleaned Finish:
   1. Provide grout cleaned finish to concrete surfaces that will be exposed in completed work.
   2. Produce grout cleaned finish on green concrete. Remove forms and execute repairing and patching immediately. After concrete, while still green, has been predampened, a slurry consisting of 1 part cement (including an appropriate quantity of white cement) and 1-1/2 parts sand passing the No. 16 sieve, by damp loose volume, shall be spread over surface with clean burlap pads or sponge rubber floats. Remove any surplus by scraping and then rubbing with clean burlap. Cure finish by fog-spraying with clean water for a minimum of 7 days.

C. Related Uniformed Surfaces: Tops of walls, horizontal offsets, and similar uniformed surfaces occurring adjacent to formed surfaces shall be struck smooth after concrete is placed and shall be floated to a texture reasonably consistent with that of formed surfaces. Final treatment on formed surfaces shall continue uniformly across uniformed surfaces.

3.08 FLATWORK:

Except as otherwise specified herein, flatwork shall conform to requirements of ACI 301, Chapter 11.

A. Edge Forms, Joints and Screeds:
   1. Set edge forms and intermediate screed strips accurately to produce designed elevations and contours in finished surfaces. Forms and screed strips shall be sufficiently strong to support vibrating bridge screeds or roller pipe screed when nature of specified finish workmanship requires use of such equipment. Align concrete surface to contours of screed strips by use of strike-off templates or approved compacting-type screeds.
   2. When formwork is cambered, set screed to like camber to maintain proper concrete thickness.
   3. Locate all types of joints as indicated, and/or as directed.

B. Consolidation: Thoroughly consolidate slabs and floors by means of vibrating bridge screeds, roller pipe screeds, or other similar approved means. Concrete to be consolidated shall be as dry as practicable, and surfaces thereof shall not be manipulated prior to finishing.

C. Floated Finish: Provide floated finish where specified to precede other finishes.
   1. After concrete has been placed, struck off, consolidated, and leveled, concrete shall not be worked further until ready for floating. Start floating when water sheen has disappeared, and/or when mix has stiffened sufficiently to permit proper operation of power-driven float. Surface shall then be consolidated with power-driven floats of impact type, except in thin slab areas such as pan slabs, where hand-floating shall be used. Hand-floating with wood or cork-faced floats shall be used in locations inaccessible to power-driven machine. At this stage, check trueness of surface with 10 ft. straightedge applied at not less than two different angles. All high spots shall be cut down and all low spots filled during this procedure to produce planes checking true under straightedge in any direction, with tolerances not exceeding 1/8 inch in 10 feet. Then, refloat slab immediately to a uniform, smooth granular texture.

2. In order to maintain specified close tolerances, bull-floating shall not be used. Darbying methods are acceptable.

D. Troweled Finish:
1. Provide troweled finish to following concrete surfaces: all interior exposed concrete surfaces.
2. For all smooth, steel-troweled, monolithic, cement finishes, screed and temp slab surface. Do not dust to remove excess water. Screen and wood float to smooth, level surface. As soon as surface becomes workable, steel trowel to smooth, hard, impervious, polished finish. Machine trowling acceptable for preliminary troweling, and also for final troweling of cement finished floors and areas that are to receive resilient floor coverings. For areas not to be covered, final troweling by hand only. Finished surface shall be free of trowel marks uniform in texture and appearance, and shall be plane to a tolerance of 1/8" to 10 feet. Mark off floors as directed. Pour panels as directed, and to avoid contingousness between freshly poured panels. All floors having this finish shall have chemical floor hardener applied as recommended by manufacturer.

E. Broom or Belt Finish:
1. Provide broom or belt finish to: Exterior sidewalks, exterior cement finished vehicular traffic area.
2. Execute finishing by giving previously floated surfaces a coarse, transverse-scored texture by drawing a broom or burlap belt across surface. Finishing shall follow immediately after floating.
3. Mark off surfaces in patterns as designated, or as directed. Execute marking with rounded finishing tool to provide smooth, straight lines.

F. Exposed Aggregate Finish: Refer to Drawings for location of finishes. After placement of concrete when bleed water has disappeared, apply Rugasol S/C with a low pressure spray at the rate of 1 gal./200 sq. ft. Brush lightly with nylon brush. Wash loosened materials off with garden hose. Adjust nozzle to fine spray to avoid loosening individual aggregate.

3.09 APPLICATION OF FLOOR SEALER:

Apply liquid floor sealer on all concrete floor surfaces specified to receive a monolithic finish that are not scheduled to receive further floor finishing materials. Apply 1st coat of liquid floor sealer as a curing compound at a maximum coverage of 200 sq. ft. per gallon. Apply 2nd (finish coat) at the completion of construction. Apply 2nd coat a maximum coverage of 500 sq. ft. per gallon.

3.10 APPLICATION OF FLOOR HARDENER:

Apply liquid floor hardener on all concrete floor surfaces specified to receive a monolithic finish that are not scheduled to receive further floor finishing materials. Concrete shall be aged a minimum of 10 days. Apply the rate of 1 gal./100 sq. ft. in each of the separate applications as follows: (Dilution Ration by volume-water: Lapidolith)

1st application - 2 : 1
2nd application - 1 : 1
3rd application - 1 : 2

3.11 CLEAN-UP:

A. Immediately after completion of concrete operations, remove from site all debris resulting from work.

B. Immediately prior to final inspection, preliminary to acceptance, wash and clean all exterior concrete wearing surfaces and interior uncovered wearing surfaces. Leave all concrete in clean acceptable condition.

(End of Section)

SECTION 03351 -- Concrete Finishing and Curing (Site)

PART 1 - GENERAL

1.01 SUBMITTALS

Submit manufacturers' technical data for curing materials proposed.

1.02 PROTECTION

Protect exposed concrete finishes from damage and soiling by other trades. Exposed concrete floors to receive sealed finish shall be covered to protect against spillages of grease, paint, pitch and other harmful substances.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Curing Membrane - 6 mil polyethylene film.
B. Curing & Sealing Compound - Kure-N-Seal 0800 by Sonneborn Chemstruction Systems.

PART 3 - EXECUTION

3.01 CONCRETE FINISHING

A. General
   1. Steps, walks and pads to receive dry broom finish.
   2. All other concrete floors to receive dry broom finish.
   3. Exposed concrete vertical surfaces shall have a rubbed finish.

B. Smooth Trowel Finish:
Surfaces shall be jitterbugged or tamped, screeded to proper elevation then floated with metal or wood floats. After concrete has sufficiently set to support weight, mechanical floats shall be used for finish leveling. After all water sheet has disappeared from surfaces, trowel with steel trowel to smooth surface free from blemishes and trowel marks. Final troweling shall be done after concrete is so hard that no mortar accumulates on trowel and a ringing sound is produced as trowels are drawn over surfaces. Finish floors shall be level within 1/8" when tested with a 10 ft. straight edge.

C. Broom Finish
Finish same as specified for trowel finish except prior to final set of concrete, brush surface with soft bristle broom to produce medium texture finish.

D. Wood Float Finish: Surfaces shall be jitterbugged or tamped, screeded to proper elevation, then floated with wood floats to obtain a tight wood float finish. This finish shall apply to slabs recessed for setting beds and topping.

E. Exposed Concrete Surfaces: Rubbed Finish - As soon as forms are removed, all fins and other projections shall be removed, offsets leveled and voids filled with mortar worked up by rubbing with carborundum stones. Additional mortar to assist in rubbing shall be composed of one part cement to one part fine sand. This finish applied to vertical concrete surfaces or other building wall surfaces as indicated.

3.02 CONCRETE CURING

A. General:
   1. All other concrete shall be cured with curing and sealing compound.
B. Membrane Method - Spread membrane over all exposed concrete surfaces immediately following finishing operations. Lap joints 12 inches and secure with tape. Apply sand on edges of membrane and maintain in place for a minimum of seven (7) days.
C. Compound Method - Immediately following finishing operation, apply a continuous uniform film of compound (full strength) by garden type sprayer, using neoprene hose.

(End of Section)