

PROJECT MANUAL

CITY OF SANGER

Request for Proposal

Porter Park Softball Field Renovations

RFP # 2023-02

Sanger, Texas



October | 2022

Parkhill Project # 03815622

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CITY OF SANGER
ADVERTISEMENT FOR PROPOSALS

City of Sanger is soliciting proposals for the construction of the following project:

PORTER PARK SOFTBALL FIELD RENOVATIONS

Proposals must be delivered to City of Sanger at 502 Elm Street, Sanger, Texas 76266, no later than **12:00 PM** local time, **Tuesday, December 6, 2022**, and then publicly opened and read aloud at 2:00 p.m. in the Conference Room, located at 502 Elm Street, Sanger, Texas 76266.

Electronic (PDF) Plans, Specifications and Contract Documents are available at no cost through the office of Parkhill. Contact the office of Parkhill to secure Electronic (PDF) Plans, Specifications, and Contract Documents:

Parkhill
255 N. Center Street, Suite 200
Arlington, Texas 76011
817.649.3216
ircarrasco@parkhill.com

Questions regarding distribution of Contract Documents and design related questions for this project shall be directed to Parkhill (attention Iridian Carrasco). Email questions to Iridian Carrasco at ircarrasco@parkhill.com. All questions concerning this project shall be submitted by **5:00 PM** on **Wednesday, November 30, 2022**. Any questions submitted after this time and date will not be addressed.

This project generally consists of: Demolition, earthwork, fencing, moving home plate and bases, softball infield surfacing, foul poles, scoreboards, concrete curb at backstop, concrete sidewalk replacement, ADA striping, turfgrass and irrigation.

Bidders must submit a bidder's bond with their proposal as a guarantee that the Bidder will enter into a contract for the project with the Owner within ten (10) days of Notice of Award of the contract. The security must be payable to the Owner in the amount of five percent (5%) of the bid submitted. Contractor must execute the contract, bonds and certificates of insurance on the forms provided in the Contract Documents. Contractors for this Project must pay no less than the prevailing wage rates for the area established by the Owner and included in the contract documents. Performance, Payment and Maintenance Bonds, bound to the City of Sanger are required, each in an amount of not less than one-hundred percent (100%) of the contract price, conditioned upon the faithful performance of the contract and upon payment of all persons supplying labor or furnishing materials.

City of Sanger reserves the right to adopt the most advantageous interpretation of the bids submitted in the case of ambiguity or lack of clearness in stating proposal prices, to reject any or all bids, and/or waive formalities. Bids may not be withdrawn within ninety (90) days from date on which bids are opened.

Advertising Dates: November 13, 2022
 November 20, 2022

BACKGROUND

John Porter Sports Park is an existing park with three softball fields located at 2201 South Stemmons in Sanger, Texas. The project purpose is to move home plate, pitcher's rubber, bases, infield limits, and outfield fence back towards the existing backstop to allow for regulation softball play at each existing softball field. Also within scope are three new scoreboards, a new curb at backstop, new foul poles, minor sidewalk replacement, ADA parking striping and ADA signage modification.

SCOPE OF WORK

Scope of work is outlined and detailed in the construction documents and specifications provided and generally consists of the following: Demolition, earthwork, fencing, moving home plate and bases, softball infield surfacing, foul poles, scoreboards, concrete curb at backstop, concrete sidewalk replacement, ADA striping, turfgrass and irrigation.

BIDDER QUALIFICATIONS

- Bidder must be engaged in the business of construction for a minimum of five (5) years.
- Bidders must have successfully completed at least five (5) projects of similar scope. This qualification must be demonstrated through references provided in the bidder's response.
- Bidder must have a good reputation in the business of construction and not currently engaged in any legal disputes regarding projects.
- Bidder must be in good financial standing, not in any form of bankruptcy, current in payment of all taxes and fees such as state franchise fees. City reserves the right to request a copy of CONTRACTOR's audited or un-audited financial statement.

PROPOSAL SCHEDULE

1. Request for Proposals Issued	November 13, 2022
2. Documents made Available	November 14, 2022
3. Deadline for Submitting Questions	November 30, 2022
4. Bid Submittal Due at 12:00 PM	December 6, 2022
5. Bids Opened and Read Aloud at 2:00 PM	December 6, 2022
6. City Council Approval	January 3, 2023
7. Start of Construction	January 10, 2023
8. Construction Completion	March 10, 2023

SELECTION PROCESS

The selection process will not be fee-based only, but will be weighted heavily on other important issues critical to the success of this Project. The following are key issues in the Owner's selection decision, not necessarily in order of priority:

City reserves the right to reject any and all CSP(s).

A. Selection and Evaluation Criteria:

- The Bidder's price, including general conditions and general requirements
- The Bidder's successful and cost-effective experience and expertise with demolition, construction and reconstruction projects of similar size, scope and quality.
- The Bidder's past performance and demonstrated capability on similar projects with this or other local municipality and on construction of publicly funded projects.
- The Bidder's proposed project personnel as shown in a project organizational chart and including their qualifications and experience as evidenced by their resumes.
- The Bidder's recent experience with project cost estimates, as well as project budget and schedule adherence.
- The Bidder's safety record supported by accurate verifiable data.
- The Bidder's reference letter indicating the quality of previous work on similar projects and satisfaction from past customers.

B. Consideration may also be given to any additional information and comments at the selection phase if it reflects on the Bidder's qualifications to perform.

C. Scoring (100 Point Scale)

- 35 points – Bidder and Individual Qualifications
 - Bidder's number of years in business, size and staffing.
 - Bidder's experience on demolition, construction and reconstruction of similar scope, size and quality.
 - Bidder's safety record and successful completion of municipal projects.
 - Experience of proposed personnel on similar projects and as a project team.
- 35 points – Capability and Capacity to Perform Work
 - Workload and availability to meet schedule.
 - Project management plan, including project organization chart.
 - Proposed project schedule.
- 15 points – Budget and Fees
 - Project price.
 - Cost estimating detail and accuracy.
 - Base fee.
 - Fee adjustments.
- 15 points – References
 - Meeting schedules and deadlines.
 - Controlling cost and meeting budgets.
 - Communication and cooperation.

AWARD

The CITY will attempt to award the Contract within 30 days after the opening of bids. The award, if made, shall be to the bidder with the best value for the City; but in no case shall the award be made until after investigations are made as to the responsibility of the bidder to whom it is proposed to award the Contract. If awarded the Contract, the bidder shall execute the Contract and finalize/provide the required bonds and evidence of insurance within 3 days after receipt of the awarded Contract.

SUBMITTAL RESPONSE GUIDELINES

Bidder response to this Request for Proposals shall include:

- Completed and signed Proposal Check List.
- Bid Proposal Form filled in with unit prices, extended prices, and total. Prices must be held firm for a period of ninety (90) days.
- Qualifications Statement. All information should be accurate and up-to-date. Reference information provided must include correct phone and email contact.
- Bid Affirmation form reviewed and signed.
- Completed Historically Underutilized Business Questionnaire. If CONTRACTOR is not a certified HUB or DBE mark "NO," sign and include with your bid. Bidder must verify that they (1) do not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association; and (2) will not discriminate during the term of the contract against a firearm entity or firearm trade association.
- Bidder must verify that it will not boycott Israel during the term of the contract.

Bidder must verify that it will not do business with Iran, Sudan or a foreign terrorist organization while providing services to the City.

- All proposals shall be accompanied by a **Bid Bond** in the amount of five (5) percent of the total **anticipated construction costs** from an approved surety company holding a permit from the State of Texas to act as surety (and acceptable according to the latest list of companies holding certificates of authority from the Secretary of the Treasury of the United States) or other surety or sureties acceptable to the Owner, payable without recourse to the Owner, as a guarantee that the bidder will enter into a contract.

Bids without a Surety-issued bid bond will not be considered. All bid bonds will be returned to the respective bidders within thirty (30) days after the bids are opened, except those which the Owner elects to hold until the successful bidder has executed the contract. Thereafter, all remaining securities, including security of the successful bidder, will be returned within fifteen (15) days.

AWARDED CONTRACTOR REQUIREMENTS

- CONTRACTOR shall execute contract, applicable bonds, Certificate of Insurance, a Form 1295 Certificate of Interested Parties and provide to CITY in the time frame required by this document.
- CONTRACTOR shall sign the necessary agreements entering into the required Contract with CITY. No Contract shall be binding on CITY until all authorized signatures required by law have been affixed and the executed Contract delivered to CONTRACTOR.
- The successful CONTRACTOR is required to provide all bonding information to his/her subcontractors and suppliers upon request; also all subcontractors shall provide proof of insurance and workman's compensation documents to the general contractor.
- CONTRACTOR must provide proof of current certificate of insurance meeting the requirements as outlined in this specification throughout the duration of the project.
- Prior to beginning construction, the successful CONTRACTOR shall:
 - Submit a Construction Schedule.
 - Provide a 24-hour emergency telephone contact.
 - Submit a schedule of values.

SOLICITATION STANDARD TERMS AND CONDITIONS

1. **INSTRUCTIONS:** These standard terms apply to all solicitations.
2. **BEST INTEREST:** City reserves the right to reject any or all responses and to waive formalities. City also reserve the right to purchase through State awarded contracts or other intergovernmental agreements when it is in the best interest of the City.
3. **PRICING:** Price(s) quoted must be held firm for ninety (90) days to allow for evaluation unless otherwise noted in this document.
4. **SILENCE OF SPECIFICATION:** The apparent silence of these specifications as to any detail or to the apparent omission of a detailed description concerning any point, shall be regarded as meaning that only the best commercial practices are to prevail. All interpretations of these specifications shall be made on the basis of this statement.
5. **F.O.B.:** All shipping shall be F.O.B. Destination.
6. **SPLIT AWARD:** City of Sanger reserves the right to award a separate contract to separate CONTRACTORS for each item/group or to award one contract for the entire bid.
7. **WITHDRAWAL OF RESPONSE TO SOLICITATION:** A response may not be withdrawn or cancelled by CONTRACTOR for a period of ninety (90) days following the date designated for the receipt without approval by the City.
8. **ERROR-QUANTITY:** Submittals must be made on units of quantity specified, extend, and show total(s). In the event of discrepancies in extension, the unit price shall govern.
9. **LATE SUBMITTALS:** Submittals received after the submission deadline shall be returned unopened and will be considered void and unacceptable. City of Sanger is not responsible for lateness from any carrier for any reason.
10. **TAXES:** City of Sanger is exempt from Federal Manufacture's Excise, and State Sales taxes. TAX MUST NOT BE INCLUDED IN PRICING. Tax exemption certificates will be executed by the City and furnished upon request.
11. **ADDENDA:** Any interpretations, corrections or changes to these specifications will be made by addenda. Sole issuing authority of the addenda shall be vested in Parkhill. Addenda will be mailed to all who are known to have received a copy of this solicitation. It is the responsibility of proposers to ensure they have received and understand any issued addenda.
12. **PROTEST:** Protests shall be submitted in writing and filed with the City Manager no less than three business days prior to the City Council meeting at which the award appears on the agenda. A written response will be prepared by the Purchasing Manager in consultation with the end user department and City Attorney. If the protesting CONTRACTOR does not agree with the staff recommendation, they may appeal to the City Council. Protesting CONTRACTORS must contact the City Secretary in order to be acknowledged and heard by City Council at the first available Council meeting.
13. **PAYMENT TERMS:** Payment terms are Net 30 unless otherwise specified by the City in this document.
14. **PATENT RIGHTS:** CONTRACTOR agrees to indemnify and hold the City harmless from any claim involving patent right infringement or copyrights on goods supplied.
15. **FUNDING:** City of Sanger is a home-rule municipal corporation operated and funded on an annual basis for Oct. 1 to Sept. 30. City reserves the right to terminate, without liability to the City, any contract for which funding is not available.
16. **ASSIGNMENT:** CONTRACTOR shall not sell, assign, transfer, or convey this contract in whole or in part, without the prior written consent of the City.
17. **VENUE/CHOICE OF LAW:** Venue for any dispute shall be Denton County, Texas. This agreement will be governed and construed according to the laws of the State of Texas.
18. **COMPLIANCE WITH LAWS:** Contractor shall be fully responsible for its employees, including meeting all state and federal requirements for minimum wage, income taxes withholding, workers' compensation, insurance, and all city, state, and federal requirements governing employer/employee relations and shall require its subcontractors on this project to provide this same certification to the City.
19. **RIGHT OF REVIEW:** CONTRACTOR covenants and agrees that the City, upon reasonable notice to

CONTRACTOR, may review any of the work performed by CONTRACTOR under this Contract.

20. DELIVERY TIMES: Deliveries will be acceptable only during normal working hours at the designated City Municipal Facility.

21. STANDARD WARRANTY: Any standard manufacturer's warranty shall be provided and submitted to the City of Sanger upon request.

22. PACKAGING: Unless otherwise indicated, items will be new, unused, and in first class condition in containers suitable for damage-free shipment and storage.

23. ORDERS AND INVOICING: A Purchase Order Number is required for all purchases. All invoices must identify the purchase order number, include the bid unit pricing by item, identify the ordering department/user, and include contact phone and email.

24. CONFLICT OF INTEREST: The successful CONTRACTOR hereby covenants and agrees that during the Contract period that CONTRACTOR and any of CONTRACTOR's associates and employees will have no interest nor acquire any interest, either direct or indirect, which will conflict in any manner with the performance of the services called for under this Contract. All activities, investigations and other efforts made by CONTRACTOR pursuant to this Contract will be conducted by employees or associates of CONTRACTOR. CONTRACTOR further covenants and agrees that it understands that the Code of Ordinances of the City of Sanger prohibits any officer or employee of the City from having any financial interest, either direct or indirect, in any business transaction with the City. Any violation of this paragraph which occurred with the actual or constructive knowledge of CONTRACTOR will render this contract voidable by the City.

- a. FORM CIQ – is required when a conflict exists in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a). By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code. A vendor commits an

offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor. This form may be obtained from the Texas Ethic Commission's website.

25. CONFIDENTIAL WORK: Any reports, designs, plan, information, project evaluations, data or any other documentation given to or prepared or assembled by CONTRACTOR under this contract shall be kept confidential and may not be made available to any individual or organization by CONTRACTOR without the prior written approval of the City except as may be required by law.

26. WARRANTY, HOLD HARMLESS, AND INDEMNITY: CONTRACTOR warrants that the commodities it delivers to the City shall be delivered in a good and workmanlike manner, and that any items delivered to the City under this contract will be fit for the particular purpose for which it was furnished. CONTRACTOR shall defend, indemnify, and hold the City whole and harmless against any and all claims for damages, costs, and expenses to persons or property that may arise out of, or be occasioned by, the execution or performance of this Contract or any of CONTRACTOR's activities or any act of commission or omission related to this Contract of any representative, agent, customer, employee, sub-CONTRACTOR or invitee of CONTRACTOR or any representative, agent, employee, or servant of the City. If an item is covered by a manufacturer's warranty, it is the responsibility of CONTRACTOR to obtain the information for City and to get the manufacturer to honor the warranty.

27. PROPRIETARY INFORMATION: Any material or information that is considered proprietary in nature must be clearly marked as such and will be treated as confidential by the City of Sanger to the extent permitted under the Open Records Act.

28. WAIVER OF ATTORNEYS FEES: CONTRACTOR and City expressly covenant and agree that in the event of any litigation arising between the parties to this contract, each party shall be solely responsible for payment of its attorneys and that in no event shall either party be responsible for the other party's attorney's fees regardless of the outcome of the litigation.

- 29. CHANGE ORDERS:** No Oral statement of any person shall modify or otherwise change or affect the terms, conditions, or specifications stated in the resulting contract. All change orders to the contract will be made in writing by the City of Sanger. Any additional work requested through change order shall be at the same unit costs submitted by CONTRACTOR at the time of bidding the project.
- 30. TERMINATION:** City may, at its option and without prejudice to any other remedy to which it may be entitled at law or in equity, terminate the right for CONTRACTOR to accept further orders under this Contract, in whole or in part, by giving at least thirty (30) days prior written notice thereof to CONTRACTOR with the understanding that no further orders may be accepted after the date specified in such notice. City shall equitably compensate CONTRACTOR, in accordance with the terms of this Contract for the commodities properly ordered prior to the date specified in such notice following inspection and acceptance of same by the City. CONTRACTOR shall not, however, be entitled to lost or anticipated profits should the City choose to exercise its option to terminate.
- 31. TERMINATION FOR DEFAULT:** The CITY reserves the right to enforce the performance of this purchase order in any manner prescribed by law or deemed to be in the best interest of CITY in the event of breach or default. The CITY reserves the right to terminate the purchase order immediately in the event CONTRACTOR fails to: (1) meet delivery schedules, or (2) otherwise perform in accordance with this contract and incorporated documents. Breach of contract or default authorizes CITY to award to another CONTRACTOR, purchase elsewhere and charge the full increase in cost and handling to the defaulting CONTRACTOR.
- 32. PERFORMANCE OF WORK:** CONTRACTOR or CONTRACTOR's associates and employees shall perform all the work called for in this Contract. CONTRACTOR hereby covenants and agrees that all of CONTRACTOR's associates and employees who work on this project shall be fully qualified to undertake same and competent to do the work described in this Contract, and the services performed shall be performed in a good and workmanlike manner, and that the finished product shall be fit for the particular use(s) contemplated by this agreement.
- 33. OWNERSHIP OF DOCUMENTS:** CONTRACTOR acknowledges that City owns all notes, reports, or other documents, intellectual property or documentation produced by CONTRACTOR pursuant to this agreement or in connection with its work which are not otherwise public records. CONTRACTOR acknowledges that City shall have copyright privileges to those notes, reports, documents, processes and information. CONTRACTOR shall provide City a copy of all such notes, reports, documents, and information (except to the extent that they contain confidential information about third parties) at City expense upon written request.
- 34. DRUG FREE WORKPLACE:** CONTRACTOR hereby covenants and agrees that during the contract period that CONTRACTOR and any of CONTRACTOR's associates and employees shall be in compliance with CITY'S drug free workplace policy.
- 35. INSPECTION:** All goods and services will be subject to inspection and testing by CITY prior to acceptance. Goods rejected and goods supplied in excess of quantities ordered may be returned to CONTRACTOR at its expense. If any of the goods or services are found at any time to be defective in material or workmanship, or otherwise not in conformity with the requirements of this purchase order, including any applicable drawings and specifications, then CITY, in addition to such other rights and remedies it may have by contract or by law or equity, at its sole discretion may reject and return such goods at CONTRACTOR's expense, require CONTRACTOR to inspect the goods and remove nonconforming goods and/or require CONTRACTOR to replace nonconforming goods or services with conforming goods or services.
- 36. PACKAGING:** All goods must be packaged in the manner as specified by CITY and shipped in the manner and by the route and carrier designated by CITY. If CITY does not specify the manner in which the goods must be packaged, CONTRACTOR shall package the goods so as to avoid any damage in transit. If CITY does not specify the manner of shipment, route or carrier, CONTRACTOR shall ship the goods at the lowest possible transportation rates, consistent with CONTRACTOR's obligation to meet the delivery schedule set forth in this Order.
- 37. AUDIT:** CITY reserves the right to audit the records and performance of contractor during the contract and for three years thereafter.
- 38. INSURANCE:** CONTRACTOR shall procure and maintain for the duration of the contract, insurance against claims for injuries to persons or damages to property, which may arise from or in connection with the

performance of the work hereunder by the vendor, his agents, representatives, employees or subcontractors. The cost of such insurance shall be paid by the vendor and included in any bids.

MINIMUM SCOPE OF INSURANCE

Coverage shall be at least as broad as:

- a. Insurance Services Office Commercial General Liability coverage "occurrence" form CG 00 01 (04 13). "Claims Made" form is unacceptable. Policy will include coverage for:
 - i. Premises - Operations
 - ii. Broad Form Contractual Liability
 - iii. Products and Completed Operations
 - iv. Use of Contractors and Subcontractors
 - v. Personal Injury
 - vi. Broad Form Property Damage
 - vii. Explosion Collapse and Underground (XCU) Coverage (when applicable, Fire Damage, Medical Expense.

NOTE: The aggregate loss limit applies to each project.

- b. Automobile Liability - as required by the State of Texas, covering all owned, hired, or non-owned vehicles. Automobile Liability is only required if vehicle(s) will be used under this contract.
- c. Workers' Compensation insurance as required by the Labor Code of the State of Texas, including Employers' Liability Insurance.
- d. Professional Liability Insurance.
- e. Builders' Risk Insurance.
- f. Excess Liability Insurance - For projects exceeding \$1,000,000.
- g. Bid/Payment/Performance Bond to cover the project.

MINIMUM LIMITS OF INSURANCE/BOND

Insurance Type	Limit
Commercial General Liability	\$1,000,000 Per Occurrence \$2,000,00 Aggregate
Automobile Liability	\$1,000,000 Combined Single Limit
Worker's Compensation / Employer's Liability	Statutory \$1,000,000
Professional Liability	\$1,000,000 Per Occurrence \$2,000,00 Aggregate
Builders' Risk	Completed Value of Structure
Excess Liability	\$5,000,000 for Projects exceeding \$1M

Bid Bond	5% of Anticipated Construction Cost
Payment Bond	100% of Contract Sum
Performance Bond	100% of Contract Sum
Maintenance Bond	100% of Contract Sum (2 yr.)

OTHER INSURANCE PROVISIONS

The policies are to contain, or be endorsed to contain the following provisions:

1. General Liability and Automobile Liability Coverages
 - a. City, its officers, officials, employees, Boards and Commissions and volunteers are to be added as "Additional Insured" as respects liability arising out of activities performed by or on behalf of the vendor, products and completed operations of the vendor, premises owned, occupied or used by CONTRACTOR. The coverage shall contain no special limitations on the scope of protection afforded to the City, its officers, officials, employees or volunteers. It is understood that the business auto policy under "Who is an Insured" automatically provides liability coverage in favor of the City.
 - b. The vendor's insurance coverage shall be primary insurance as respects the City, its officers, officials, employees and volunteers. Any insurance or self-insurance maintained by the City, its officers, officials, employees or volunteers shall be excess of the vendor's insurance and shall not contribute with it.
 - c. Any failure to comply with reporting provisions of the policy shall not affect coverage provided to the City, its officers, officials, employees, Boards and Commissions or volunteers.
 - d. The vendor's insurance shall apply separately to each insured against whose claim is made or suit is brought, except to the limits of the insured's liability.
2. Workers' Compensation and Employer's Liability Coverage - The insurer shall agree to waive all rights of subrogation against the City, its officers, officials, employees and volunteers for losses arising from work performed by the vendor for the City.
3. Professional Liability – A claims made policy is acceptable coverage which must be maintained during the course of the project and up to two (2) years after completion and acceptance of the project by the City.
4. All Coverages - Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled or non-renewed by either

party, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given the City.

ACCEPTABILITY OF INSURERS

All insurance shall be issued by responsible insurance companies eligible to do business in the State of Texas and having an A.M. Best Financial rating of A-VI or better.

VERIFICATION OF COVERAGE

Contractor shall furnish the City of Sanger with certificates of insurance affecting coverage required. The certificates for each insurance policy are to be signed by

a person authorized by that insurer to bind coverage on its behalf. Certificates of Insurance must be submitted on a form approved by the Texas Department of Insurance. Certificates of Insurance similar to the ACCORD form are acceptable. City will not accept Memorandums of Insurance or Binders as proof of insurance. City reserves the right to require complete, certified copies of all required insurance policies at any time.

39. CERTIFICATE OF INTERESTED PARTIES 1295

FORM: At time of contract execution CONTRACTOR must provide a signed 1295 Form received directly from the _____ State _____ of _____ Texas.
https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm.

SPECIAL TERMS AND CONDITIONS FOR CONSTRUCTION

1. CONTRACTOR'S DUTY AND SUPERINTENDENT:

CONTRACTOR shall give adequate attention to the faithful prosecution and completion of this contract and shall keep a full-time competent superintendent (with five (5) years minimum supervisory experience & work resume), and any other assistants on the project during its progress. The superintendent shall represent CONTRACTOR in his absence and all directions given to him shall be as binding as if given to CONTRACTOR.

City shall have the right to have the Superintendent furnished by CONTRACTOR removed pursuant to the contract documents if, in the City's sole judgment, such superintendent is not fulfilling his or her obligations under this contract, including, but not limited to, said superintendent's failure or inability to properly interpret and implement the plans and the specifications, to effectively expedite the work and supervise all employees utilized in connection therewith, to ensure adequate communication with, and a minimum inconvenience to, the public, or to cooperate with utilities, railroads, other contractors or agencies working on the project or near the project. Failure of CONTRACTOR to replace the superintendent when requested by the City shall be cause for the City to withhold partial payments.

CONTRACTOR is and at all times shall remain an independent CONTRACTOR, solely responsible for the manner and method of completing this work under this contract, with full power and authority to select the means, method and manner of performing such work, so long as such methods do not adversely affect the completed improvements, CITY being interested only in the result obtained and conformity of such completed improvements to the plans, specifications and contract.

Likewise, CONTRACTOR shall be solely responsible for the safety of himself, his employees and other persons, as well as for the protection of the safety of the improvements being erected and the property of himself or any other person, as a result of his operations hereunder. Design construction drawings and specifications as well as any additional information concerning the work to be performed passing from or

through CITY, shall not be interpreted as requiring or allowing CONTRACTOR to deviate from the plans and specifications, the intent of such drawings, specifications and any other such instructions being to define with particularity the agreement of the parties as to the work CONTRACTOR is to perform. CONTRACTOR shall be fully and completely liable, at his own expense, for design, construction, installation and use, or non-use, of all items and methods incident to performance of the contract, and for all loss, damage or injury incident thereto, either to person or property, including, without limitation, the adequacy of all temporary supports, shoring, bracing, scaffolding, machinery or equipment, safety precautions or devices, and similar items or devices used by him during construction.

Any review of work in process, or any visit or observation during construction, or any clarification of plans and specifications, by CITY, or any agent, employee, or representative of either of them, whether through personal observation on the project site or by means of approval of shop drawings for temporary construction or construction processes, or by other means or method, is agreed by CONTRACTOR to be for the purpose of observing the extent and nature of work completed or being performed, as measured against the drawings and specifications constituting the contract, or for the purpose of enabling CONTRACTOR to more fully understand the plans and specifications so that the completed construction work will conform thereto, and shall in no way relieve CONTRACTOR from full and complete responsibility for the proper performance of his work on the project, including but without limitation the propriety of means and methods of CONTRACTOR in performing said contract, and the adequacy of any designs, plans or other facilities for accomplishing such performance.

Deviation by CONTRACTOR from plans and specifications that may have been in evidence during any such visitation or observation by CITY, or any of his representatives, whether called to CONTRACTOR'S attention or not shall in no way relieve CONTRACTOR from responsibility to complete all work in accordance with said plans and specifications.

2. CONTRACTOR'S UNDERSTANDING: It is understood and agreed that CONTRACTOR, by careful examination, is satisfied as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of the materials to be encountered, the character of equipment and facilities needed preliminary to and during the prosecution of the work, the general and local conditions, and all other matters which can in any way affect the work under this contract. No verbal agreement or conversation with any officer, agent or employee of CITY, or any of its representatives either before or after the execution of this contract, shall affect or modify any of the terms or obligations herein contained.

3. CHARACTER OF WORKERS: CONTRACTOR agrees to employ only orderly and competent workers, skillful in the performance of the type of work required under this contract, to do the work; and agrees that whenever CITY shall inform in writing that any worker(s) on the project are, in his opinion, incompetent, unfaithful or disorderly, such worker(s) shall be discharged from the project and shall not again be employed for this project without CITY'S written consent.

4. FIELD OFFICES: The installation of field offices shall be permitted only at such places as approved by CITY. In addition, all sanitary conditions of the grounds in or about such structures shall at all times be maintained in a manner satisfactory to CITY. CONTRACTOR shall be responsible for obtaining for all necessary Permits.

CONTRACTOR shall not be required to provide a field office for CITY's Field Representative; however, CONTRACTOR'S Superintendent shall be available on the job site at all times when portions of the work are in progress.

5. SANITATION: Necessary sanitary conveniences for use by workers on the project shall be properly secluded from public observation and shall be constructed and maintained by CONTRACTOR in such manner and at such points as approved by CITY. Onsite sanitary convenience facilities and their use shall be strictly enforced.

6. SHOP DRAWINGS: CONTRACTOR shall submit to DESIGN TEAM and CITY, with such promptness as to cause no delay in work or in that of any other CONTRACTOR, digital files (PDF), unless otherwise

specified, of all shop and/or setting drawings and schedules required for the work of the various trades, and DESIGN TEAM shall review them with reasonable promptness, making desired comments. CONTRACTOR shall make any revisions required by DESIGN TEAM; file revised copies and furnish other copies as may be needed. The DESIGN TEAM review of such drawings or schedules shall not relieve CONTRACTOR from responsibility for deviations from drawings or specifications, unless CONTRACTOR has, in writing, called DESIGN TEAM'S attention to such deviations at the time of submission, nor shall it relieve CONTRACTOR from responsibility for errors of any sort in shop drawings or schedules. It shall be CONTRACTOR'S responsibility to fully and completely review all shop drawings to ascertain their effect on CONTRACTOR'S ability to perform the required contract work in accordance with the plans and specifications and within the contract time.

Such review by DESIGN TEAM shall be for the sole purpose of determining the sufficiency of said drawings or schedules to result in finished improvements in conformity with the plans and specifications, and shall not relieve CONTRACTOR of his duty as an independent contractor as previously set forth, it being expressly understood and agreed that DESIGN TEAM does not assume any duty to pass upon the propriety or adequacy of such drawings or schedules, or any means or methods reflected thereby, in relation to the safety of either person or property during CONTRACTOR'S performance hereunder.

7. PRELIMINARY APPROVAL: The DESIGN TEAM shall not have the power to waive the obligations of this contract for the furnishing by CONTRACTOR of good new material, and of his performing good work as herein described, and in full accordance with the plans and specifications. No failure or omission of DESIGN TEAM to discover, object to or condemn any defective work or material shall release CONTRACTOR from the obligations to fully and properly perform the contract, including without limitations, the obligation to at once tear out, remove and properly replace the same at any time prior to final acceptance upon the discovery of said defective work or material; provided, however, that DESIGN TEAM shall,

upon request of CONTRACTOR, inspect and accept or reject any material furnished, and in event the material has been once accepted by DESIGN TEAM, such acceptance shall be binding on CITY unless it can be clearly shown that such material furnished does not meet the specifications for this work.

Any questioned work may be ordered taken up or removed for re-examination, by CITY, prior to final acceptance, and if found not in accordance with the specifications for said work, all expense of removing, re-examination and replacement shall be borne by CONTRACTOR, otherwise the expense thus incurred shall be allowed as EXTRA WORK, and shall be paid for by CITY; provided that, where inspection or approval is specifically required by the specifications prior to performance of certain work, should CONTRACTOR proceed with such work without requesting prior inspection or approval CONTRACTOR shall bear all expense of taking up, removing, and replacing this work if so directed by CITY.

8. **DEFECTS AND THEIR REMEDIES:** It is further agreed that if the work or any part thereof, or any material brought on the site of the work for use in the work or selected for the same, shall be deemed by CITY as unsuitable or not in conformity with the specifications, CONTRACTOR shall, after receipt of written notice thereof from CITY, forthwith remove such material and rebuild or otherwise remedy such work so that it shall be in full accordance with this contract.
9. **CHANGES AND ALTERATIONS:** CONTRACTOR further agrees that CITY may make such changes and alterations as CITY may see fit, in the line, grade, form, dimensions, plans or materials for the work herein contemplated, or any part thereof, either before or after the beginning of the construction, without affecting the validity of this contract and the accompanying Performance, Payment and Maintenance Bonds.

If such changes or alterations diminish the quantity of the work to be done, they shall not constitute the basis for a claim for damages, or anticipated profits on the work that may be dispensed with. If the amount of work is increased, and the work can fairly be classified under the specifications, such increase shall be paid for according to the quantity actually done and at the unit price (as

applicable). In case CITY shall make such changes or alterations which make useless any work already done or material already furnished or used in said work, then CITY shall compensate CONTRACTOR for any material or labor so used, and for any actual loss occasioned by such changes due to actual expenses incurred in preparation for the work as originally planned.

10. **KEEPING OF PLANS, SPECIFICATIONS AND RECORD DRAWINGS ACCESSIBLE:** The CITY OR DESIGN TEAM shall furnish CONTRACTOR with three (3) sets of plans and specifications, if desired, at no expense to CONTRACTOR. Additional sets of plans may be purchased from DESIGN TEAM.

CONTRACTOR shall maintain, at the Job Site, one copy of all Drawings, Specifications, Addenda, approved Shop Drawings, and Change Orders, in good order and marked to record all changes made during construction, and updated daily. These shall be referred to as record drawings, and shall be available to CITY and DESIGN TEAM at all times with the latest revisions noted thereon. The As-Built drawings, marked to record all changes made during construction, shall be delivered to CITY upon completion of the Project, with a letter signed by CONTRACTOR stating that the record plans submitted show all changes made during construction.

CONTRACTOR shall review the updated record drawings with CITY AND DESIGN TEAM, at the time of the monthly application for payment submittal. Failure of CONTRACTOR to maintain the record drawings shall be grounds for the withholding of that month's application for payment submittal, until the record drawings are properly updated and reviewed.

CONTRACTOR shall have a Registered Professional land Surveyor (RPLS) tie "as-built" locations of all valves, blow offs, manholes, inlets, bends, tees, crosses, P.C.'s, P.T.'s, and at every five hundred (500) feet along straight lines and curves on proposed mains. Horizontal and vertical data must be collected for each tie. Ties shall be made at the top of pipe and all control points and bench marks used in the survey shall be consistent with the plans and reported. Such work will be performed prior to backfill and the results furnished to the City. The points

shall be recorded and reviewed monthly on the "as-built" drawings. CONTRACTOR shall also provide an ASCII file containing point number, northing coordinate, easting coordinate, elevation, and point description for each tie and control point used in the survey. The ASCII file shall be submitted with the monthly invoice on Digital Video Disc (DVD) and at the end of the project with the "as-built" drawings in electronic format on a DVD accompanied with a hard copy print of the file. Construction As Built Surveying shall only be performed if called out as a bid item or listed as subsidiary to another bid item.

11. OWNERSHIP OF DRAWINGS: All drawings, specifications and copies thereof furnished by CITY OR DESIGN TEAM shall not be reused on other work and, with the exception of the signed contract sets, are to be returned to CITY on request, at the completion of the work. All models (if any) are the property of CITY.

12. ADEQUACY OF DESIGN/CONSTRUCTION: It is understood that CITY believes it has employed a competent team of engineers and designers. It is, therefore, agreed that DESIGN TEAM shall be responsible for the adequacy of the design, sufficiency of the Contract documents, the safety and integrity of the completed structure and the practicability of the operations of the completed project; provided CONTRACTOR has complied with the requirements of the said Contract Documents, all approved modifications thereof, and additions and alterations thereto approved in writing by CITY and DESIGN TEAM. CONTRACTOR is bound to perform his services to the standards of the industry. If CONTRACTOR determines the design to be inadequate, he shall notify CITY and DESIGN TEAM prior to construction the items he feels are inadequate. CONTRACTOR shall comply with the requirements of the Contract Documents, all approved modifications thereof, and additions and alterations thereto approved in writing by CITY. The burden of proof of such compliance shall be upon CONTRACTOR to show compliance with said requirements of the Contract Documents, approved modifications thereof and all approved additions and alterations thereto.

13. RIGHT OF ENTRY: The CITY reserves the right to enter the property or location on which the works herein contracted for are to be constructed or installed, by such

agent or agents as he may elect, for the purpose of observing or inspecting the work, or for the purpose of constructing or installing such collateral work as said CITY may desire.

14. COLLATERAL CONTRACTS: The CITY agrees to provide by separate contract or otherwise, all labor and material essential to the completion of the work specifically excluded from this contract, in such manner as not to delay the progress of the work or damage said CONTRACTOR, except where such delays are specifically mentioned elsewhere in the Contract Documents.

15. DISCREPANCIES AND OMISSIONS: It is further agreed that it is the intent of this contract that all work must be done and all material must be furnished in accordance with the generally accepted practice, and in the event of any discrepancies between the separate contract documents. In the event that there is still any doubt as to the meaning and intent of any portion of the contract, specifications or drawings, DESIGN TEAM AND OR/CITY shall define which is intended to apply to the work.

16. EQUIPMENT, MATERIALS AND CONSTRUCTION AREA: CONTRACTOR shall be responsible for the care, preservation, conservation, and protection of all materials, supplies, machinery, equipment, tools, apparatus, accessories, facilities, all means and methods of construction, and any and all part of the work, whether CONTRACTOR has been paid, partially paid, or not paid for such work, until the entire work is completed and accepted.

17. DAMAGES: In the event CONTRACTOR is damaged in the course of the completion of the work by the act, neglect, omission, mistake or default of CITY, or of any other CONTRACTOR employed by CITY upon the work, thereby causing loss to CONTRACTOR, CITY agrees that he will reimburse to the extent allowable by law CONTRACTOR for such loss. In the event CITY is damaged in the course of the work by the act, negligence, omission, mistake or default of CONTRACTOR, or should CONTRACTOR unreasonably delay the progress of the work being done by others on the job so as to cause loss for which CITY becomes liable, then CONTRACTOR shall reimburse CITY for such loss.

18. PROTECTION AGAINST ACCIDENT TO EMPLOYEES AND THE PUBLIC:

CONTRACTOR shall at all times exercise reasonable precautions for the safety of employees and others on or near the work and shall comply with all applicable provisions of Federal, State, and Municipal safety laws and building and construction codes. All machinery and equipment and other physical hazards shall be guarded in accordance with the "Manual of Accident Prevention in Construction", Latest Edition of the Associated General Contractors of America except where incompatible with Federal, State, or Municipal laws or regulations. CONTRACTOR shall provide such machinery guards, safe walkways, ladders, bridges, gangplanks, and other safety devices. The safety precautions actually taken and their adequacy shall be the sole responsibility of CONTRACTOR, acting at his discretion as an independent contractor.

19. PERFORMANCE, PAYMENT AND MAINTENANCE BONDS:

Unless otherwise specified, it is further agreed by the parties to this Contract that CONTRACTOR will execute separate performance, payment and maintenance bonds, each in the sum of one hundred (100) percent of the total contract price, in standard forms for this purpose, guaranteeing faithful performance of the work and the fulfillment of any guarantees required, and further guaranteeing payment to all persons supplying labor and materials or furnishing him any equipment in the execution of the Contract, and further guaranteeing to make all necessary repairs, reconstruction and renewal of any part of said construction, and to furnish the labor and materials to make good and to repair any defective condition growing out of or on account of the breakage or failure of any substance or the improper function of any part of the constructed work, and reimburse the Owner for the costs of all design services required to be furnished by the Owner which are directly attributable to the restoration of the constructed work, and it is agreed that this Contract shall not be in effect until such performance, payment and maintenance bonds are furnished to and approved by CITY.

Unless otherwise approved in writing by CITY, the Surety Company underwriting the bonds shall be licensed to do business in the State of Texas and be acceptable according to the latest list of companies holding certificates of authority from the Secretary of the Treasury of the United

States. Unless otherwise specified, the cost of the premium for the performance and payment bonds shall be included in CONTRACTOR'S proposal.

- 20. LOSSES FROM CAUSES:** Unless otherwise specified, all loss or damage to CONTRACTOR arising out of the nature of the work to be done, or from the action of the elements, or from any unforeseen circumstance in the prosecution of the same, or from unusual obstructions or difficulties which may be encountered in the prosecution of the work, shall be sustained and borne by CONTRACTOR at his own cost and expense.

- 21. PROTECTION OF ADJOINING PROPERTY:** The said CONTRACTOR shall take proper means to protect the adjacent or adjoining property or properties in any way encountered, which might be injured or seriously affected by any process of construction to be undertaken under this Agreement, from any damage or injury by reason of said process of construction; and he shall be liable for any and all claims for such damage on account of his failure to fully protect all adjoining property. CONTRACTOR agrees to indemnify, save and hold harmless CITY and DESIGN TEAM against any claim or claims for damages due to any injury to any adjacent or adjoining property, arising or growing out of the performance of the contract; but any such indemnity shall not apply to any claim or any kind arising out of the existence or character of work.

- 22. PROTECTION AGAINST CLAIMS OF SUB-CONTRACTORS, WORKERS, MATERIAL MEN AND FURNISHERS OF MACHINERY, EQUIPMENT AND SUPPLIES:** CONTRACTOR agrees that he will indemnify and save CITY and DESIGN TEAM harmless from all claims growing out of the lawful demands of sub-contractors, laborers, workmen, mechanics, material men and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the furtherance of the performance of this contract. When so desired by CITY, CONTRACTOR shall furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged or waived. If CONTRACTOR fails so to do, then CITY may withhold from CONTRACTOR'S unpaid compensation a sum of money deemed reasonably sufficient to liquidate any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged, whereupon payments to

CONTRACTOR shall be resumed in full, in accordance with the terms of this contract, but in no event shall the provisions of this sentence be construed to impose any obligation upon CITY by either CONTRACTOR or his Surety.

23. PROTECTION AGAINST ROYALTIES OR PATENTED INVENTION: CONTRACTOR shall pay all royalties and license fees, and shall provide for the use of any design, device, material or process covered by letters patent or copyright by suitable legal agreement with the patentee or CITY. CONTRACTOR shall defend all suits or claims for infringement of any patent or copyright rights and shall indemnify and save CITY, and DESIGN TEAM harmless from any loss on account thereof. If the material or process specified or required by CITY and/or DESIGN TEAM is an infringement, CONTRACTOR shall be responsible for such loss unless he promptly gives such information to CITY.

24. LAWS AND ORDINANCES: CONTRACTOR shall at all times observe and comply with all Federal, State and local laws, ordinances and regulations, which in any manner affect the contract or the work, and with the execution of this contract shall indemnify and save harmless CITY and DESIGN TEAM against any claim arising from the violation of any such laws, ordinances, and regulations whether by CONTRACTOR or his employees, except where such violations are called for by the provisions of the Contract Documents. If CONTRACTOR observes that the plans and specifications are at variance therewith, he shall promptly notify CITY and DESIGN TEAM in writing, and any necessary changes shall be adjusted as provided in the contract for changes in the work. If CONTRACTOR performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to CITY and DESIGN TEAM, he shall bear all costs arising therefrom. In case CITY is a body politic and corporate, the law from which it derives its powers, insofar as the same regulates the objects for which, or the manner in which, or the conditions under which CITY may enter into contract, shall be controlling, and shall be considered as part of this contract, to the same effect as though embodied herein.

25. ASSIGNMENT AND SUBLETTING: CONTRACTOR further agrees that he will retain personal control and will give his personal attention to the fulfillment of this contract and that he will not assign by Power of Attorney, or

otherwise, or sublet said contract without the written consent of CITY, and that no part or feature of the work will be sublet to anyone objectionable to DESIGN TEAM or CITY. CONTRACTOR further agrees that the subletting of any portion or feature of the work, or materials required in the performance of this contract, shall not relieve CONTRACTOR from his full obligations to CITY as provided by this Agreement.

26. INDEMNIFICATION: CONTRACTOR with the execution of this contract shall defend, indemnify and hold harmless CITY and DESIGN TEAM and their respective officers, agents and employees, from and against all damages, claims, losses, demands, suits, judgments and costs, including reasonable attorneys' fees and expenses, rising out of or resulting from the performance of the work, provided that any such damages, claim, loss, demand, suit, judgment, cost or expense:

A. Is attributable to bodily injury, sickness, disease or death or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom; and

B. Is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any one of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

The obligation of CONTRACTOR under this Paragraph shall not extend to the liability of CITY or DESIGN TEAM, his agents or employees arising out of the preparation or approval of maps, drawings, reports, surveys, Change Orders, designs or specifications, or the giving of or the failure to give directions or instructions by DESIGN TEAM, his agents or employees, provided such giving or failure to give is the primary cause of the injury or damage.

In the performance of this contract, CONTRACTOR agrees to assume liability for doing or failing to do anything that may result in the death of or bodily injury to any person and loss of or damage to any property. CONTRACTOR agrees to provide all necessary safeguards and to take all proper precautions against the

occurrence of accidents, injuries or damages to any persons or property and to be responsible for and to indemnify and save harmless CITY and DESIGN TEAM from all loss or damage to any or all claims rising by reason of accidents, injuries or damage to any persons, including the employees and agents of CONTRACTOR, and sub-contractor, or CITY or any property in connection with work pursuant to this contract, regardless of the degree of supervisory capacity any agent employee of CITY might have, and from all fines, penalties or loss incurred by reason of the violation of any law, regulation or ordinance. CONTRACTOR further agrees to defend, at CONTRACTOR'S expense, any and all suits or actions, civil or criminal arising out of such claims or matters.

- 27. TIME AND ORDER OF COMPLETION:** It is the meaning and intent of this contract, unless otherwise herein specifically provided, that CONTRACTOR shall be allowed to prosecute his work at such time and seasons, in such order of precedence, and in such manner as shall be most conducive to economy of construction: provided, however, that the order and the time of prosecution shall be such that the work shall be completed as a whole and in part, in accordance with this contract, the plans and specifications, and within the time of completion designated in the Proposal; provided, also, that when CITY is having other work done, either by contract or his own force, CITY may direct the time and manner of constructing the work done under this contract, so that conflicts will be avoided and the construction of the various works being done for CITY shall be harmonized.

CONTRACTOR shall submit, at such times as may reasonably be requested by CITY OR DESIGN TEAM, schedules which shall show the order in which CONTRACTOR proposes to carry on the work, with dates at which CONTRACTOR will start multiple parts of the work, and estimated dates of completion of the multiple parts.

- 28. EXTENSION OF TIME:** Should CONTRACTOR be delayed in the completion of the work by any act or neglect of CITY, or by other contractors employed by CITY, or by changes ordered in the work, or by strikes, lockouts, fires and unusual delays by common carriers, or unavoidable causes beyond CONTRACTOR'S control, or by any cause

which DESIGN TEAM shall decide justifies the delay, then an extension of time shall be allowed for completing the work, sufficient to compensate for the delay, the amount of the extension, to be determined by DESIGN TEAM, provided however, that CONTRACTOR shall give DESIGN TEAM notice in writing of the cause of such delay within thirty (30) days of the event. The CITY shall have thirty (30) days from the time CONTRACTOR submits his request for the extension of time to respond in writing as to the approval or denial.

If the extension is denied, the requirement for Failure to Complete Work on Time will be enforced as specified in the contract.

- 29. HINDRANCES AND DELAYS:** CONTRACTOR shall make no claims for damages resulting from hindrances or delays from any cause (except where the work is stopped by order of CITY) during the progress of any portion of the work embraced in this contract. In case said work shall be stopped by the act of CITY, then such expense as in the judgment of DESIGN TEAM is caused by CITY; CITY shall pay such stoppage of said work to CONTRACTOR.
- 30. QUANTITIES AND MEASUREMENTS:** No extra or customary measurements of any kind will be allowed, but the actual measured and/or computed length, area, solid contents, number and weight only shall be considered, unless otherwise specifically provided.
- 31. ESTIMATED QUANTITIES:** This agreement, including the specifications and plans, is intended to show clearly all work to be done and material to be furnished hereunder. Where the estimated quantities are shown for the various work to be done and material to be furnished under this contract, they are approximate and are to be used only as a basis for estimating the probable cost of the work and for comparing the proposals offered for the work. It is understood and agreed that the actual amount of work to be done and material to be furnished under this contract may differ somewhat from these estimates, and that where the basis for payment under this contract is the unit price method, payment shall be for the actual amount of such work done and the material furnished.

Where payment is based on the unit price method, CONTRACTOR agrees that he will make no claim for damages, anticipated profits or otherwise on account of

any differences which may be found between the quantities of work actually done, the material actually furnished under this contract and the estimated quantities contemplated and contained in the specifications and plans; provided, however, that in case the actual quantity of any major item should become as much as twenty-five (25%) percent more than or twenty-five (25%) percent less than the estimated or contemplated quantity for such items, then either party to this Agreement upon demand, shall be entitled to a revised consideration upon the portion of the work above or below twenty-five (25%) percent of the estimated quantity.

A "Major Item" shall be construed to be any individual bid item included in the proposal that has a total cost equal to or greater than five (5) percent of the NOT TO EXCEED TOTAL AMOUNT OF BID or any item that exceeds twenty-five thousand dollars (\$25,000).

Any revised consideration is to be determined by agreement between the parties, otherwise by the terms of this Agreement, as provided under "Extra Work."

32. PRICE OF WORK: In consideration of the furnishing of all the necessary labor, equipment and material, and the completion of all work by CONTRACTOR, and on the completion of all work and of the delivery of all material embraced in this Contract in full conformity with the specifications and stipulations herein contained, CITY agrees to pay CONTRACTOR the prices set forth in the Proposal, which has been made a part of this request for bid document. CONTRACTOR hereby agrees to receive such prices in full for furnishing all material and all labor required for the aforesaid work, also for well and truly performing the same and the whole thereof in the manner and according to this Agreement.

33. PARTIAL PAYMENTS: Except as otherwise provided by the Contract, between the 25th day and the last day of each month CONTRACTOR shall make an estimate of the value of the work done during the month under the specifications. CONTRACTOR shall prepare the estimate on a form approved by CITY. CONTRACTOR shall forward the estimate required above to CITY and DESIGN TEAM by not later than the last day of the month. The monthly estimate may include acceptable nonperishable materials delivered to and stored at the

work site or an insured storage facility accessible to CITY; payment for such stored materials shall be allowed on the same percentage basis of the value as provided hereinafter. The monthly estimate shall also provide such supporting documentation as CITY and DESIGN TEAM or the other applicable provisions of the specifications may require. The CITY and DESIGN TEAM shall verify that CONTRACTOR'S estimate matches the total value of work done and acceptable non-perishable materials delivered to the work site or insured storage facility, based upon the bid proposal prices and quantities measured or verified by CITY and DESIGN TEAM. In the event of a discrepancy between quantities of work as shown in CONTRACTOR'S estimate and measured quantities as shown in CITY and DESIGN TEAM'S verification, CITY and DESIGN TEAM'S determination or measurement shall be final, and CONTRACTOR'S estimate shall be adjusted to reflect the quantities of work as shown by DESIGN TEAM and CITY's verification. Payment shall be made by CITY about thirty (30) days after receipt of the estimate from CONTRACTOR. The payment shall be for the total amount of the approved estimate; less a retainage of ten (10) percent of the completed work for contracts under four hundred thousand (\$400,000). It is understood, however, that in case the whole work be near to completion and some unexpected and unusual delay occurs due to no fault and neglect on the part of CONTRACTOR and CITY, then CITY may - upon written recommendation of DESIGN TEAM - pay a reasonable and equitable portion of the retained percentage to CONTRACTOR, or CONTRACTOR at CITY'S option, may be relieved of the obligation to fully complete the work and, thereupon, CONTRACTOR shall receive payment of the balance due him under the contract subject only to the conditions stated under "Final Payment." CITY shall not be liable for interest on any late or delayed payment caused by any claim or dispute, any discrepancy in quantities as described above, any failure to provide supporting documentation or other information required with the estimate or as a precondition to payment under the Contract, or due to any payment CITY has a right to withhold under the Contract.

No pay estimate requests shall be considered unless submitted with the following items as one complete package:

- Updated Construction Schedule
- SWPPP Reports (Storm Water Pollution Prevention Program) if required
- All test reports for the month (or payment period duration)
- Updated as-built drawings reviewed by City Inspector

Note: A check list of these items shall be accompanied by a given pay estimate and shall be initialed by the City Inspector prior to processing. (Please see Attachment 1 of these bid documents).

CONTRACTOR shall submit to CITY and DESIGN TEAM a Schedule of Values for each Lump Sum item of work for review and approval 20 days before the work is scheduled to be performed. CONTRACTOR shall itemize in the Schedule of Values the actual costs to CONTRACTOR to perform the various parts of the Lump Sum item work which shall include a reasonable overhead and profit cost item. Partial payment for Lump Sum items shall be made based on the value and percentage of the work in the bid item completed, as approved by DESIGN TEAM and CITY and as reflected in the Schedule of Values.

CONTRACTOR shall furnish to DESIGN TEAM and CITY such detailed information as DESIGN TEAM and CITY may request to assist in the review of monthly estimates. It is understood that the monthly estimates shall be approximate only, and all monthly estimates and partial payments shall be subject to correction in the estimate rendered following the discovery of an error in any previous estimate, and such estimate shall not in any respect be taken as an admission of DESIGN TEAM and CITY of the amount of work done or of its quality or sufficiency nor as an acceptance of the work or the release of CONTRACTOR of any of its responsibility under the Contract.

- 34. USE OF COMPLETED PORTIONS:** The CITY shall have the right to take possession of and use any completed or partially completed portions of the work, notwithstanding the fact that the time for completing the entire project or such portions may not have expired, such taking possession and use shall not be deemed as acceptance of any work completed in accordance with the Contract Documents. If such prior use increases the cost of or delays the project, CONTRACTOR shall be entitled to such extra compensation, or extension of time, or both, as DESIGN TEAM may determine.

CONTRACTOR shall notify CITY and DESIGN TEAM when, in CONTRACTOR'S opinion, the contract is "substantially completed" and when so notifying CITY and DESIGN TEAM, CONTRACTOR shall furnish to CITY and DESIGN TEAM in writing a detailed list of

unfinished work. The CITY and DESIGN TEAM will review CONTRACTOR'S list of unfinished work and will add thereto such items as CONTRACTOR has failed to include. The "substantial completion" of the structure or facility shall not excuse CONTRACTOR from performing all of the work undertaken, whether of a minor or major nature, and thereby completing the structure or facility in accordance with the Contract Documents.

- 35. FINAL COMPLETION AND ACCEPTANCE:** After CONTRACTOR has given CITY and DESIGN TEAM written notice that the work has been completed, DESIGN TEAM and CITY shall inspect such work; if the work is found to be satisfactorily completed in accordance with the Contract Documents, DESIGN TEAM shall notify CITY to start processing project final reconciliation documents. After these documents have been executed by all parties, it shall be the duty of CITY to issue a letter of acceptance within 10 days from the date when final reconciliation documents have been executed or advise CONTRACTOR in writing of the reason for non-acceptance.
- 36. FINAL PAYMENT:** Upon notification by CONTRACTOR of the completion of the project, DESIGN TEAM shall proceed to make final inspections of all work performed and materials furnished under the terms of this agreement and certify the same to CITY with the "CONTRACTOR'S Affidavit of Final Payment and Release". The balance due CONTRACTOR, under terms of this Agreement, provided CONTRACTOR has fully performed contractual obligations under the terms of this contract; and said payment shall become due in any event upon said performance by CONTRACTOR. Neither the Letter of Acceptance nor the final payment nor any provision in the Contract Documents, shall relieve CONTRACTOR of the obligation for fulfillment of any warranty, which may be required.
- 37. PAYMENT WITHHELD:** The CITY may, on account of subsequently discovered evidence, withhold or nullify the whole or part of any certificate to such extent as may be necessary to protect itself from loss on account of:
- Defective work not remedied.
 - Claims filed or reasonable evidence indicating probable filing of claims.
 - Failure of CONTRACTOR to make payment properly to sub-contractors or for material or labor.
 - Damage to another contractor.
 - Reasonable doubt that the work can be completed for the unpaid balance of the contract amount.
 - Reasonable indication that the work will not be completed within the contract time.

When CONTRACTOR provides a Surety Bond satisfactory to CITY, which will protect CITY in the amount withheld, payment shall be made for amounts withheld because of them.

- 38. DELAYED PAYMENTS:** Should CITY fail to make payment to CONTRACTOR of the sum named in any partial or final statement, when payment is due, CITY shall be re-notified in writing to pay CONTRACTOR with copy of the invoice. In the event payment not be promptly made, as provided under "Partial Payments," to CONTRACTOR at any time thereafter CONTRACTOR may treat the contract as abandoned by CITY and recover compensation, as provided under "Abandonment of Contract," unless such payments are withheld in accordance with the provisions of "Payment Withheld."

- 39. MATERIALS ON HAND:** The CITY and DESIGN TEAM shall determine and specify in the bid documents which items (if any) warrant materials on-hand consideration. Only Approved materials purchased and stored more than thirty days before use may be considered for materials on-hand. Prior to the reimbursement of materials on-hand, CONTRACTOR shall furnish CITY with paid invoices for such materials including other supporting documents CITY may deem necessary. Upon receipt of such invoices, CITY will revise the corresponding pay items to reflect a line item for labor and another for material. The total price of these two-line items shall equal the total price of the whole item. The maximum material unit cost shall not exceed 60% of the total unit price of labor and material.

CONTRACTOR shall have complete fiscal responsibility as to the safety of the materials on-hand including storage costs and shall protect such materials against theft and other calamities. Contractor shall make arrangements for the storage of the materials on-hand with installation made in a timely manner. Legitimate citizens' complaints shall be accommodated by CONTRACTOR.

Measurement and payment for labor costs of such materials shall be made as materials are consumed. Measurement and payment for both material and labor cost shall be made per items 33 – 38 above.

- 40. CHANGE ORDERS:** Without invalidating this Agreement, CITY may, at any time, order additions,

deletions or revisions to the work; such changes will be authorized by Change Order to be prepared by DESIGN TEAM for execution by CITY and CONTRACTOR. The Change Order shall set forth the basis for any change in contract price, as hereinafter set forth for "Extra Work", and any change in contract time, which may result from the change.

In the event CONTRACTOR shall refuse to execute a Change Order which has been prepared by DESIGN TEAM and executed by CITY, DESIGN TEAM may, in writing, instruct CONTRACTOR to proceed with the work as set forth in the Change Order and CONTRACTOR may make claim against CITY for "Extra Work" involved therein, as hereinafter provided.

Any increase in the original contract by more than twenty five percent (25%) shall trigger additional bidding requirements.

- 41. MINOR CHANGES:** The DESIGN TEAM may authorize minor changes in the work by field order not inconsistent with the overall intent of the Contract Documents and not involving an increase in Contract price. If CONTRACTOR believes that any minor change or alteration authorized by DESIGN TEAM involves Extra Work and entitles him to an increase in the Contract price, CONTRACTOR shall make written request to DESIGN TEAM for a written Change Order.

In such case, CONTRACTOR, by copy of his communication to DESIGN TEAM or otherwise in writing shall advise CITY of his request to DESIGN TEAM for a written Change Order and that the work involved may result in an increase in the Contract price.

Any request by CONTRACTOR for a change in Contract price shall be made prior to beginning the work covered by the Proposed Change.

42. VARIANCE FROM SPECIFIC COMPLIANCE:

CONTRACTOR may seek a Change Order allowing variance from specific requirements of the contract documents in situations where portions of the project are already on hand, constructed or installed and found to be at variance with specific contract requirements and where destructive removal or similar radical measures are the only way to obtain specific compliance. In such event, CONTRACTOR shall, at his own expense, secure services of a Texas Licensed Professional other than any DESIGN TEAM members to analyze, test, study and otherwise evaluate the circumstances and to summarize his findings, recommendations and conclusions in writing under his professional seal. CONTRACTOR shall submit such summary to DESIGN TEAM, along with his request either for: (1) full acceptance of the variance "as is", if it is conclusive in the opinion of CITY and DESIGN TEAM that the finished product fully meets the intended purpose and use and is not generally diminished in quality, or; (2) proposed modifications to render the item acceptable, or; (3) proposed price credit to be allowed provided the item is acceptable for its intended use, even though of measurably diminished quality, (or combinations thereof). DESIGN TEAM shall review such information and submit to CITY with comments, and a Change Order shall be executed if both CONTRACTOR and CITY mutually agree upon the matter. All code and life safety minimum specifications shall be met. No variances will be allowed. Any code, life safety or other construction deficiency shall be proved, removed and replaced.

43. EXTRA WORK: It is agreed that the basis of compensation to CONTRACTOR for work either added or deleted by a Change Order or for which a claim for Extra Work is made shall be determined by one or more of the following methods:

Method (A)-By agreed unit prices; or

Method (B)-By agreed lump sum; or

No claim for Extra Work of any kind will be allowed unless ordered in writing by DESIGN TEAM and approved by CITY. In case any orders or instructions, either oral or written, appear to CONTRACTOR to involve Extra Work for which he should receive compensation or an adjustment in the construction time, he shall make written request to

DESIGN TEAM for written order authorizing such Extra Work.

44. ARBITRATION: There are no provisions for "arbitration" in this contract.

45. TIME OF FILING CLAIMS: It is further agreed by both parties hereto that all questions of dispute or adjustment presented by CONTRACTOR shall be in writing and filed with DESIGN TEAM within thirty (30) days after DESIGN TEAM has given any directions, order, instruction or any event to which CONTRACTOR desires to take exception. The DESIGN TEAM shall reply within thirty (30) days to such written exceptions by CONTRACTOR and render his final decision in writing. It is further agreed that final acceptance of the final payment shall be a bar to any claims by either party, except where noted otherwise in the Contract Documents.

46. ABANDONMENT BY CONTRACTOR: The work, or any portion of the work under contract, shall be suspended immediately on written order of CITY declaring CONTRACTOR to be in default. A copy of such notice shall be served on CONTRACTOR'S Surety. The contract may be terminated by CITY for any good cause or causes, among others of which special reference is made to the following:

- A. Failure of CONTRACTOR to start the work within ten (10) days from date specified in the written work order issued by CITY to begin the work;
- B. Substantial evidence that the progress of the work being made by CONTRACTOR is insufficient to complete the work within the specified working time;
- C. Failure of CONTRACTOR to provide sufficient and proper equipment, materials or construction forces for properly executing the work;
- D. Substantial evidence or notification that CONTRACTOR has abandoned the work or discontinuance of the performance of the work or any part thereof and failure to resume performance within a reasonable time after notice to do so;
- E. Substantial evidence that CONTRACTOR has become insolvent or bankrupt, or otherwise financially unable to carry on the work;
- F. Deliberate failure on the part of CONTRACTOR to observe any requirements of these specifications or to comply with any orders given by DESIGN TEAM as provided for in these specifications;
- G. Failure of CONTRACTOR to promptly make good any defects in materials or workmanship, or any

defects of any nature, the correction of which has been directed in writing by CITY;

- H. Substantial evidence of collusion for the purpose of illegally procuring a contract or perpetrating fraud on CITY in the construction of work under contract;
- I. Repeated and flagrant violations of safe working procedures;
- J. The filing by CONTRACTOR of litigation against CITY prior to final completion of the work.
- K. Failure of CONTRACTOR to maintain proper financial responsibility and to maintain the required bonding, insurance or payments to suppliers and subcontractors.
- L. Failure of CONTRACTOR to provide a Project Superintendent and accompanying staff as required for successful carrying out of the work extents and duration.

When the work is suspended for any of the causes itemized above, or for any other cause or causes, CONTRACTOR shall discontinue the work or such part thereof as CITY shall designate, whereupon the Surety may either at its option assume the Contract or that portion thereof which CITY has ordered CONTRACTOR to discontinue and perform the same or, with the written consent of CITY, sublet the same, provided, however, that the Surety shall exercise its option within two weeks after the written notice to discontinue the work has been served upon CONTRACTOR and upon the Surety or its authorized agents. The Surety in such event shall assume CONTRACTOR'S place in all respects and shall be paid by CITY for all work performed by it in accordance with the terms of the Contract, but in no event shall such payments exceed the Contract amount, regardless of the cost to the Surety to complete the work.

All monies remaining due CONTRACTOR at the time of their default shall thereupon become due and payable to the Surety as the work progresses, subject to all terms of the Contract. In case the Surety does not, within the hereinabove specified time, exercise its obligation to assume the Contract or that portion thereof which CITY has ordered CONTRACTOR to discontinue, then CITY shall have the power to complete by contract or otherwise, as it may determine, the work herein described or such part thereof as it may deem necessary; and CONTRACTOR hereto agrees that CITY shall have the right to take possession of or use any or all of the materials, tools, equipment, supplies and property of every kind provided by CONTRACTOR for the purpose of their work and to procure other tools, equipment and materials for the completion of the same and to charge to the account of CONTRACTOR the expense of said contract for labor, materials, tools, equipment and expenses incident thereto. The expense so charged shall be deducted by CITY out of such monies as may be due

or may at any time thereafter become due CONTRACTOR under and by virtue of the Contract or any part thereof.

The CITY shall not be required to obtain the lowest bid for the work of completing the Contract, but the expenses to be deducted shall be the actual cost of such work. In case such expense is less than the sum which would have been payable under the contract if the same had been completed by CONTRACTOR, then in such case CITY may pay CONTRACTOR the difference in the cost, provided that CONTRACTOR shall not be entitled to any claim for damages or for loss of anticipated profits.

In case such expense shall exceed the amount which would have been payable under the contract if the same had been completed by CONTRACTOR, CONTRACTOR and their Surety shall pay the amount of the excess to CITY on notice from CITY for excess due including any costs incurred by CITY, such as inspection, legal fees and liquidated damages. When any particular part of the work is being carried on by CITY by contract or otherwise under the provisions of this section, CONTRACTOR shall continue the remainder of the work in conformity with the terms of the Contract and in such manner as not to hinder or interfere with the performance of workmen employed as above provided by CITY or Surety.

47. **ABANDONMENT BY CITY:** In case CITY shall fail to comply with the terms of this Contract, and should fail or refuse to comply with said terms within ten (10) days after written notification by CONTRACTOR, then CONTRACTOR may suspend or wholly abandon the work, and may remove therefrom all machinery, tools and equipment, and all materials on the site of work that would have not been included in payments to CONTRACTOR and have not been wrought into the work. And thereupon DESIGN TEAM shall make an estimate of the total amount earned by CONTRACTOR, which estimate shall include the value of all work actually completed by said CONTRACTOR, (at the prices stated in the attached proposal where unit prices are used), the value of all partially completed work at a fair and equitable price, and the amount of all extra work performed at the prices agreed upon, or provided for by the terms of this Contract, and a reasonable sum to cover the cost of any provisions made by CONTRACTOR to carry the whole work to completion and which cannot be utilized. The DESIGN TEAM shall then make a final statement of the balance due CONTRACTOR by deducting from the above estimate all previous payments by CITY and all other sums that may be retained by CITY under the terms of this Agreement and shall certify same to CITY who shall pay to CONTRACTOR on or before thirty (30) days after the date of the notification by

CONTRACTOR the balance shown by said final statement as due CONTRACTOR, under the terms of this Agreement.

- 48. FAILURE TO COMPLETE WORK ON TIME:** If CONTRACTOR fails to complete the Contract in the number of calendar days bid or the calendar date specified in the Bid, the time charge will be made for each calendar day thereafter.

The time set forth in the proposal for the completion of the work is an essential element of the Contract. For each calendar day under the conditions described in the preceding paragraph that any work shall remain incomplete after the expiration of the calendar days allowed, the amount per day given in the following schedule will be deducted from the money due or to become due CONTRACTOR, not as a penalty, but as liquidated damages for the added expense of CITY staff, DESIGN TEAM and inspection involvement:

FOR AMOUNT OF CONTRACT	AMOUNT OF LIQUIDATED DAMAGES
\$25,000 or less	\$ 150
\$25,001 to \$100,000	\$ 250
\$100,001 to \$1,000,000	\$ 500
\$1,000,001 to \$10,000,000	\$ 1,000
More than \$10,000,000	\$2,500

In the alternative, if the actual damages are capable of being determined, those damages shall be deducted from the amounts due CONTRACTOR instead of the liquidated damages amount, and a notation of such damages shall be made at the time of payment, if not agreed upon earlier.

- 49. REJECTED MATERIALS:** All materials which have been rejected or condemned by CITY, DESIGN TEAM or inspector shall be immediately removed from the work site at CONTRACTOR'S expense.

50. MATERIALS AND WORKMANSHIP:

No material which has been used by CONTRACTOR for any temporary purpose whatsoever is to be incorporated in the permanent structure. Where materials or equipment are specified by a trade or brand name, it is not the intention of CITY to discriminate against an equal product of another manufacturer, but rather to set a definite standard of quality of performance, and to establish an equal basis for the evaluation of bids. Where the words "equivalent", "proper" or "equal to" are used, they shall be understood to mean that the item referred to shall be proper, the equivalent of or equal to some other item in the opinion or judgment of CITY and DESIGN TEAM.

Unless otherwise specified, all materials shall be the best of their respective kinds and shall be in all cases fully equal to approved samples. Notwithstanding that the words "or equal to" or other such expressions may be used in the specification in connection with a material, manufactured article or process, unless a substitute shall be approved in writing by CITY and DESIGN TEAM, CITY and DESIGN TEAM shall have the right to require the use of such specifically designated material, article or process.

- 51. STORAGE:** Materials delivered to the site of the work in advance of their use shall be stored so as to cause the least inconvenience to the public and in a manner satisfactory to CITY and DESIGN TEAM or per project specifications.

- 52. REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK:** All work which has been rejected or condemned shall be repaired, or if it cannot be repaired satisfactorily, it shall be removed and replaced at CONTRACTOR'S expense. Defective materials shall be immediately removed from the site of the work. Work done without proper inspection or any extra or unclassified work done without written authority and prior agreement in writing as to prices, shall be done at CONTRACTOR'S risk, and will be considered unauthorized, and at the option of DESIGN TEAM, may not be measured and paid for, and may be ordered removed at CONTRACTOR'S expense.

- 53. ACCESS TO CONSTRUCTION SITE:** It is CONTRACTOR'S responsibility to provide all-weather access to the construction site at no extra pay unless noted otherwise under separate items. CONTRACTOR shall provide all-weather access to City inspectors, Materials testing staff and Emergency response vehicles and personnel throughout the construction period. CONTRACTOR shall restore all disturbed construction areas to pre-construction condition or better at no extra pay.

- 54. PROJECT CLEAN-UP:** CONTRACTOR shall be aware that keeping the project site in a neat and orderly condition is considered an integral part of the contracted work and as such shall be considered subsidiary to the appropriate bid items. Clean up work shall be done as need or directed by CITY and/or DESIGN TEAM as the work progresses. If, in the opinion of CITY and/or DESIGN TEAM it is necessary, clean-up shall be done on a daily basis.

Clean up work shall include, but not be limited to:

- Removing the trash, paper, rubbish and debris resulting from operations
- Sweeping streets clean of dirt or debris
- Alleviating any dust nuisance in the work area
- Storing excess material in appropriate and organized manner

- Keeping trash of any kind off of property not in the work area

If CITY and/or DESIGN TEAM does not feel that the jobsite has been kept in an orderly condition, on the next estimate payment (and all subsequent payments until completed) the appropriate bid item(s) will be reduced by 25%.

Upon completion of the work and before final acceptance and final payment shall be made, CONTRACTOR shall completely clean and remove from the site of the work all equipment, construction materials, surplus and discarded materials, temporary structures and debris of every kind. CONTRACTOR shall leave the site of the work in a neat and orderly condition equal to that which originally existed, or as called for in the Contract Documents. Surplus and waste materials removed from the site of the work shall be disposed of at locations satisfactory to CITY and/or DESIGN TEAM, and at CONTRACTOR'S sole cost.

55. CLEANUP FOR FINAL ACCEPTANCE:

CONTRACTOR shall make a final cleanup of all parts of the work before final acceptance by CITY and DESIGN TEAM. This cleanup shall restore the site of the work to an orderly manner true to original grade and appearance. Impacts shall not be made to adjacent private or public property without written permission filed with CITY.

56. WATER FOR CONSTRUCTION: At the expense of CITY, the water required for construction may be obtained by CONTRACTOR from the water system of CITY by making arrangements with the City of Sanger's Parks and Recreation Department (940.458.2718).

57. PROJECT MAINTENANCE: CONTRACTOR shall maintain and keep in good repair the improvements covered by the Contract Documents during the life of the Contract and for a period of one year after completion and acceptance of the project by the City of Sanger. During such time he shall, at his own expense, furnish all labor, materials, tools and equipment required and shall make such repairs and renewals or shall perform such work or reconstruction as may be necessary by any structural or functional defect or failure resulting from neglect, faulty workmanship or faulty materials in any part of the work performed by him.

Notice to CONTRACTOR that repairs, renewals or reconstruction is required under this provision of the Contract may be made in the form of any written or electronic correspondence, signed by CITY or DESIGN TEAM.

CONTRACTOR is responsible to take immediate action to fix or repair any utility outage or hazardous condition due to construction failure within four (4) hours after notification. In case CONTRACTOR is not able to fulfill this responsibility, CITY will take the necessary action to

correct the problem. The cost of such action(s) will be paid by CONTRACTOR.

58. PROTECTION OF SITE, EXISTING STRUCTURES AND UTILITIES:

CONTRACTOR shall protect all existing conditions including, but not limited to, structures, walks, pipelines, sprinkler systems, trees, shrubbery, lawns, utilities, facilities and other improvements during the progress of his work and shall remove from the site all debris and unused materials at CONTRACTORS' expense.

59. LOCATION AND PROTECTION OF EXISTING STRUCTURES AND UTILITIES:

In the preparation of plans and specifications, DESIGN TEAM has endeavored to indicate the location of existing underground utility lines, which are known. No attempt has been made to show minor lines or service lines; however, it is not guaranteed that all major lines or structures have been shown on the plans. Prior to the start of construction, CONTRACTOR shall communicate with local representatives of the utility companies, including, but not limited to, Gas Company, Telephone Company, Electric Company, Cable Company, and any other public and private utility companies, and advise said representatives of the route of the proposed construction in order to obtain the assistance of the utility companies in the location of and in the avoidance of the conflicts with utility lines. CONTRACTOR shall uncover and determine the elevation and location of all conflicts well ahead of any excavation.

Where excavation endangers adjacent structures and utilities, CONTRACTOR shall, at his own expense, carefully support and protect all such structures and/or utilities so that there will be no failure or settlement. Where it is necessary to move services, poles, guy wires, pipelines, or other obstructions, CONTRACTOR shall notify and cooperate with the structure and/or utility OWNER.

In case damage to any existing structure or utility occurs, whether failure or settlement, CONTRACTOR shall restore the structure or utility to its original condition and position at the sole expense of CONTRACTOR. All costs of temporarily or permanently supporting or relocating conflicting structures or utilities shall be borne by CONTRACTOR.

Prior to commencing construction, CONTRACTOR shall furnish the utility owners of such known utilities with copies of the plans showing the proposed construction. As the construction commences and progresses, it shall be CONTRACTOR'S responsibility to make arrangements with the utility owners of such utilities to uncover them or otherwise confirm their location if there appears to be any probability of conflict with the proposed project under construction. The cost of uncovering and locating such utilities shall be borne by CONTRACTOR unless the utility

company involved takes care of it or unless payment to CONTRACTOR for such work is specifically provided in the Contract Documents.

If any such existing utilities are in direct physical conflict with the proposed project being constructed, CONTRACTOR may be compensated for extra work if approved by CITY that CONTRACTOR is required to perform to resolve such conflict. CONTRACTOR will not be allowed extra compensation on the basis of inconveniences resulting from working near such utilities that are close to, but not in direct conflict with the project, however. CONTRACTOR shall also be responsible for notifying the owner of such utility or any damages resulting from work by CONTRACTOR.

60. CONSTRUCTION MEANS AND METHODS:

CONTRACTOR shall abide by all applicable federal, state and local laws governing construction and related activities. All construction work shall meet Occupational Safety and Health Administration (OSHA) standards that are in effect at the time of Bid Opening.

61. PROPERTY LINES AND MONUMENTS:

CONTRACTOR shall protect all property corner markers and when such markers or monuments are in danger of being disturbed, they shall be properly referenced and if disturbed shall be reset at the expense of CONTRACTOR by a Surveyor Registered in the State of Texas.

62. BARRICADES AND DANGER SIGNALS:

Where the work is carried on in or adjacent to any street, alley or public place, CONTRACTOR shall furnish, erect, maintain, and remove such barricades, fences, lights, control signs and other danger signals; shall provide such watchmen and shall take such other precautionary measures for the protection of persons or property and of the work as are necessary. Barricades shall conform to the Texas Manual on Uniform Traffic Control Devices, Latest Edition. From sunset to sunrise, CONTRACTOR shall furnish and maintain sufficient lights at each barricade. A sufficient number of barricades or linear feet of fencing shall be erected to keep vehicles from being driven on or into any work under construction.

CONTRACTOR shall furnish watchmen in sufficient number as required to protect the work when/where applicable. All items associated with traffic control shall be included at no extra pay unless specified otherwise in the Contract Documents.

CONTRACTOR must notify the Parks and Recreation Department (940.458.2718) prior to the removal and/or installation of any permanent signs.

CONTRACTOR will be held responsible for all damage to the work due to the failure of barricades, signs, lights and watchmen to protect it, and whenever evidence is found of such damage, CITY and/or DESIGN TEAM may order the damaged portion immediately removed and replaced by CONTRACTOR at his cost and expense. CONTRACTOR'S responsibility for the maintenance of barricades, signs and lights and for providing watchmen shall not cease until CITY has accepted the project.

- 63. TESTING OF MATERIALS:** The CITY shall provide geotechnical and structural testing for all projects unless specified otherwise. CONTRACTOR shall be responsible for notifying CITY's testing firm at least 24 hours prior to any required testing. CONTRACTOR shall coordinate all testing activities with CITY and its inspector and shall facilitate testing firm staff throughout the construction period. The inspector shall be present during all testing. All pipe, fittings, and other construction materials shall be inspected for defects and conformance to City of Sanger Standards prior to placement, installation, or erection.

All testing results will be submitted to CONTRACTOR, DESIGN TEAM and CITY within 5 days of testing. The CITY and DESIGN TEAM shall make final decision as to the validity of all testing results.

CONTRACTOR shall be responsible for ensuring that materials to be tested are in compliance with all plans and specifications prior to testing. All materials found not to be in compliance with the plans and specifications before and after testing shall be removed and replaced at CONTRACTOR'S expense along with all necessary retesting costs incurred.

SUBMITTAL FORMS

PROPOSAL SUBMITTAL CHECK LIST

Interested parties MUST submit one (1) proposal marked as original, one (1) copy, and one (1) flash drive (a single consolidated electronic file) that includes all of the following items listed below for consideration. The submission should be in the order stated below.

	ITEM	CHECK LIST
1	Proposal Submittal Check List	
2	Bid Proposal Form	
3	Bid Bond	
4	Qualifications Statement	
5	Certificate of Insurance and Indemnification	
6	Historically Underutilized Business Questionnaire	
7	NO BOYCOTT Verification Form	
8	Proposed Construction Schedule	

By my signature I affirm all items as listed above have been completed and submitted as part of my firm's proposal.

Authorized Signature

Title

Print/Type Name

Date

BID PROPOSAL

BIDDER: _____

ADDRESS: _____

PHONE: _____

PRIMARY CONTACT: _____

PROJECT IDENTIFICATION:

JOHN PORTER SPORTS PARK SOFTBALL FIELD RENOVATIONS Parkhill Project No. 8156.22

1. The undersigned Bidder proposes and agrees, if this Proposal is accepted, to enter into an agreement with Owner in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Proposal and in accordance with the other terms and conditions of the Contract Documents.

2. Bidder accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those terms and conditions dealing with the disposition of Proposal guaranty. This Proposal will remain subject to acceptance for 90 calendar days after the day of opening Proposals. Bidder will sign and submit the Agreement with the Bonds and other documents required by the Contract Documents within three (3) calendar days after the date of Owner's Notice of Award.

3. In submitting this Proposal, Bidder represents, as more fully set forth in the Agreement, that:

- (a) Bidder has examined copies of all the Contract Documents and of the following Addenda (receipt of which is hereby acknowledged):

Dated	Received	Number
_____	_____	No. 1
_____	_____	No. 2

- (b) Bidder has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.

- (c) Bidder has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests and studies that pertain to the subsurface or physical conditions at the site or which otherwise may affect the cost, progress, performance or furnishing of the Work as Bidder considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, and no additional examinations, investigations, explorations, tests, reports or similar information or data are or will be required by Bidder for such purposes.
- (d) Bidder has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing Underground Facilities at or contiguous to the site and assumes responsibility for the accurate location of said Underground Facilities. No additional examinations, investigations, explorations, tests, reports or similar information or data in respect of said Underground Facilities are or will be required by the Bidder in order to perform and furnish the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents.
- (e) Bidder has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.
- (f) Bidder has given Architect/Engineer written notice of all conflicts, errors or discrepancies that it has discovered, if any, in the Contract Documents and the written resolution thereof by Engineer is acceptable to Bidder.
- (g) This Proposal is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Proposal; Bidder has not solicited or induced any person, firm or corporation to refrain from submitting a Proposal; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.

4. Bidder will complete the Work for the price(s) shown in the following schedule of bid items (Table 1) and within **80** calendar days.

5. Bidder hereby agrees to commence work within ten (10) days after the date of written notice to proceed being provided, and to substantially complete the work on which the Bidder has bid within **80** consecutive calendar days as part of this Proposal. Within 30 additional calendar days after Substantial Completion, all outstanding issues shall be addressed and ready for final payment. All such time restrictions are subject to extensions of time as are provided by the Solicitation Standard Terms Conditions and Special Terms and Conditions.

6. Bidder agrees that the implementation of the Owner's right to delete any portion of the improvements shall not be considered as waiving or invalidating any conditions or provisions of the contract or bonds. Bidder shall perform the Work as altered and no allowances shall be made for anticipated profits.

7. The right is reserved, as the interest of the Owner may require, to reject any and all Proposals and to waive any informality in the Proposals received.

8. Since the Work on this Project is being performed for a governmental body and function, the Owner will issue to Contractor a certificate of exemption for payment for the State Sales Tax on materials incorporated into this Project.

Bidder will complete Work per Contract Documents for the following price(s):

Item No.	Description	Spec Section No.	Estimated Quantity	Unit	Bid Unit Price	Bid Price
General Items						
1.	General conditions		1	LS	\$	\$
2.	Erosion control SWPPP plan	01 57 23	1	LS	\$	\$
3.	Clearing/grubbing/demo – Removal of old infield extents	31 10 00; 31 22 16.10	1	LS	\$	\$
4.	Concrete sidewalk demo	31 10 00	543	SF	\$	\$
5.	Existing scoreboard removal	02 41 19	3	EA	\$	\$
6.	Existing foul pole removal	02 41 19	6	EA	\$	\$
7.	Chain link outfield fence removal	02 41 19; 31 10 00	1	LS	\$	\$
8.	Erosion control	01 50 00; 01 57 23	1	LS	\$	\$
	Subtotal					
Softball Field						
9.	Light re-aiming	01 70 00	1	LS	\$	\$
10.	6" depth topsoil and compost	31 22 16.10	110	CY	\$	\$
11.	Turfgrass (solid sod)	31 22 16.10; 32 92 00	660	SY	\$	\$
12.	Irrigation modifications	32 84 00	1	LS	\$	\$
13.	Infield fine grading and reconditioning	31 22 16.10	1	LS	\$	\$
14.	6' ht. chain link fence	32 31 13	1130	LF	\$	\$
15.	Fence top protection	32 33 00	1	LS	\$	\$
16.	Home plates, base plates and pitcher's rubbers	32 33 00	1	LS	\$	\$
17.	Foul pole	32 33 00	6	EA	\$	\$
18.	Scoreboard	32 33 00	3	EA	\$	\$

Item No.	Description	Spec Section No.	Estimated Quantity	Unit	Bid Unit Price	Bid Price
19.	Concrete curb at backstop wall	32 13 13	365	LF	\$	\$
20.	Sidewalk	32 13 13	543	SF	\$	\$
21.	Restripe ADA parking and update ADA signage	32 17 23.95	1	LS	\$	\$
	Subtotal					
Owner Contingency						
22.	Owner contingency		1	LS	\$ 36,000.00	\$ 36,000.00
TOTAL OF ALL UNIT BASE BID ITEMS						\$
Bid Deduct Alternate One: Reuse existing outfield fencing		Total Deduct Alternate One				\$

BID ITEM SUMMARY

Bid Item 1: General Conditions

1. The Work under this item shall include the establishment of facilities on the project site and the movement of personnel, construction equipment and supplies to the project site or to the vicinity of the project site in order to enable the Contractor to begin work on the contract.
2. The cost of all General Conditions will be measured as a lump sum item and will encompass General Conditions costs for the entire project.

Bid Item 2: Erosion Control SWPPP Plan

1. The Work under this item shall be in accordance with Section 01 57 23 "Temporary Stormwater Pollution Control" in addition to notes provided in Plans. Required items include the following:
 - i) Maintenance, inspection, and repair as needed for the duration of the job.
 - ii) TCEQ requirements.
 - iii) SWPPP Plan, any other BMP indicated in plans of specifications, and any items not listed in proposed as required by City of Sanger.
2. Measurement and payment shall be made on the basis of lump sum item for all materials, labor, and incidentals necessary to complete the Work.

Bid Item 3: Clearing / Grubbing / Demo – Removal of Old Infield Extents

1. The work under this item shall be in accordance with Sections 31 10 00 "Earth Moving" and 31 22 16.10 "Fine Grading for Athletic Field" in addition to details and notes provided in the Plans.
2. Removal items include (but are not limited to) the following:
 - i) Removal of full depth of infield surfacing in locations to be converted to turf sod.
3. Measurement and payment shall be made on the basis of lump sum item for all labor and incidentals necessary to complete the Work at all three fields.

Bid Item 4: Concrete Sidewalk Demo

1. The work under this item shall be in accordance with Sections 02 41 19 "Selective Demolition" and 31 10 00 "Site Clearing" in addition to details and notes provided in the Plans.
2. Removal items include (but are not limited to) the following:
 - i) Concrete sidewalk.
3. Measurement and payment shall be made on the basis of square feet for all labor and incidentals necessary to complete the Work.

Bid Item 5: Existing Scoreboard Removal

1. The work under this item shall be in accordance with Section 02 41 19 "Selective Demolition" in addition to plans, details and notes provided in Drawings.
2. Removal items include (but are not limited to) the following:
 - i) Scoreboard.
 - ii) Post.
 - iii) Footing.
3. Measurement and payment shall be made on the basis of each scoreboard for all labor and incidentals necessary to complete the Work at all three fields.

Bid Item 6: Existing Foul Pole Removal

1. The work under this item shall be in accordance with Section 02 41 19 "Selective Demolition" in addition to plans, details and notes provided in Drawings.
2. Removal items include (but are not limited to) the following:
 - ii) Foul Pole.
 - iv) Posts.
 - v) Footings.
3. Measurement and payment shall be made on the basis of each foul pole for all labor and incidentals necessary to complete the Work at all three fields.

Bid Item 7: Remove Existing Chain Link Outfield Fence

1. All Work associated with this item shall be in accordance with Section 02 41 19 "Selective Demolition" and Section 31 10 00 "Site Clearing" in addition to plans and notes provided in Drawings.
2. Removal items include (but are no limited to) the following:
 - i) Removal of rails, posts, caps, fittings, and footings.
 - ii) Price shall include filling in post footings and providing solid sod over abandoned footings.
3. Measurement and payment shall be made on the basis of lump sum bid price for all labor and incidentals necessary to complete the Work at all three fields.

Bid Item 8: Erosion Control

1. All Work associated with this item shall be in accordance with Sections 01 50 00 "Temporary Facilities and Controls" and 01 57 23 "Temporary Stormwater and Pollution Control" in addition to plans, details and notes provided in the Drawings.
2. Measurement and payment shall be made on the basis of lump sum item for all materials, labor and incidentals necessary to complete the Work.

Bid Item 9: Light Re-aiming

1. All Work associated with this item shall be in accordance with Section 01 70 00 "Execution and Closeout Requirements" in addition to manufacturer requirements.
2. Light re-aiming shall include aiming all existing softball field light poles to new field locations to achieve optimum playable light levels.
3. Measurement and payment shall be made on the basis of lump sum price for labor and incidentals necessary to complete the Work at all three fields.

Bid Item 10: Topsoil (6" Topsoil and Compost)

1. All Work associated with this item shall be in accordance with Sections 31 22 16.10 "Fine Grading for Athletic Field" and notes provided in Drawings.
2. Measurement and payment shall be made on the basis of cubic yard bid price for all materials, labor and incidentals necessary to complete the Work at all three fields.

Bid Item 11: Turfgrass (solid sod)

1. All Work associated with this item shall be in accordance with Section 32 92 00 "Turf and Grasses" in addition to plans and notes provided in Drawings.
2. Measurement and payment shall be made on the basis of square yard bid price for all materials, labor and incidentals necessary to complete the Work at all three fields.

Bid Item 12: Irrigation System Modifications

1. All Work associated with this item shall be in accordance with Section 32 84 00 "Planting Irrigation" in addition to plans, details and notes provided in Drawings.
2. Irrigation repair items include (but are not limited to) the following:
 - i) Relocate or provide new rotor heads and piping necessary to provide full irrigation coverage at the adjusted infield extents.
 - ii) Ensure that full irrigation system is operation with proper coverage at fields.
3. Measurement and payment shall be made on the basis of a lump sum, bid price for "Irrigation System." This price is full compensation for furnishing and installing all components; flushing and testing water lines; furnishing and operating equipment; and labor, tools, and incidentals necessary to complete the work at all three fields.

Bid Item 13: Infield Fine Grading and Reconditioning

1. All Work associated with this item shall be in accordance with Sections 31 22 16.10 "Fine Grading for Athletic Field" in addition to plans and notes provided in Drawings.
2. Infield Reconditioning for this item include (but are not limited to) the following:
 - i) Removal of existing infield materials as instructed in Section 31 22 16.10.
 - ii) Fine grading of existing infield materials to meet grades identified in grading plan and as required to provide a fully surface draining infield.
 - iii) Installation of new infield reconditioner and stabilizer per manufacturer specifications.
3. Measurement and payment shall be made on the basis of lump sum bid price for all labor and incidentals necessary to complete the Work at all three fields.

Bid Item 14: 6' Ht. Chain Link Fence

1. All Work associated with this item shall be in accordance with Sections 32 31 13 "Chain Link Fences and Gates" in addition to plans, details and notes provided in Drawings.
2. Measurement and payment shall be made on the basis of a linear foot bid price for all materials, labor and incidentals necessary to complete the Work at all three fields.

Bid Item 15: Fence Top Protection

1. All Work associated with this item shall be in accordance with Section 32 33 00 "Site Furnishings" in addition to plans, details and notes provided in Drawings.
2. Fence top protection is to be installed on all existing foul line fencing and foul line gates, and proposed outfield fence.
3. Measurement and payment shall be made on the basis of a lump sum bid price for all materials, labor and incidentals necessary to complete the Work at all three fields.

Bid Item 16: Home Plates, Base Plates, & Pitchers Rubber

1. All Work associated with this item shall be in accordance with Sections 32 33 00 "Site Furnishings" in addition to plans and notes provided in Drawings.
2. Measurement and payment shall be made on the basis of lump sum bid price for all materials, labor and incidentals necessary to complete the Work at all three fields.

Bid Item 17: Foul Pole

1. All Work associated with this item shall be in accordance with Section 32 33 00 "Site Furnishings" in addition to plans, details and notes provided in Drawings.
2. Foul Pole includes (but are not limited to) the following:
 - i) Pole.
 - ii) Footing.
3. Measurement and payment shall be made on the basis of a per pole bid price for all labor and incidentals necessary to complete the Work.

Bid Item 18: Scoreboard

1. All Work associated with this item shall be in accordance with Section 32 33 00 "Site Furnishings" in addition to plans, details and notes provided in Drawings.
2. Scoreboard includes (but are not limited to) the following:
 - i) Scoreboard.
 - ii) Pole.
 - iii) Hardwired control units.
 - iv) Contractor provided delegated design concrete footing sealed by professional Engineer who is licensed in the State of Texas.
3. Measurement and payment shall be made on the basis of a per scoreboard bid price for all materials, delegated design, labor and incidentals necessary to complete the Work.

Bid Item 19: Concrete Curb at Backstop Wall

1. All Work associated with this item shall be in accordance with Section 32 13 13 "Concrete Paving" in addition to plans, details and notes provided in Drawings.
2. Concrete curb includes (but are not limited to) the following:
 - i) Concrete curb.
 - ii) All reinforcing and dowels as detailed.
3. Measurement and payment shall be made on the basis of a linear foot bid price for all materials, labor and incidentals necessary to complete the Work.

Bid Item 20: Sidewalk

1. All Work associated with this item shall be in accordance with Section 32 13 13 "Concrete Paving" in addition to plans, details and notes provided in Drawings.
2. Sidewalk includes (but are not limited to) the following:
 - i) Concrete sidewalk.
 - ii) All reinforcing and dowels as detailed.
3. Measurement and payment shall be made on the basis of a square foot bid price for all materials, labor and incidentals necessary to complete the Work.

Bid Item 21: Restripe ADA Parking and Update ADA Signage

1. All Work associated with this item shall be in accordance with Section 32 17 23.95 "Pavement Markings and Signs" in addition to plans, details and notes provided in Drawings.
2. Restriping and ADA signage includes (but are not limited to) the following:
 - i) Removal of existing ADA universal markings.
 - ii) Restriping ADA stalls.
 - iii) Adding ADA "Fine" sign to existing ADA parking sign poles.
3. Measurement and payment shall be made on the basis of a lump sum bid price for all materials, labor and incidentals necessary to complete the Work.

Bid Deduct Alternate 1: Reuse existing outfield fence to new outfield fence location

1. All Work associated with this item shall be in accordance with Section 32 31 13 "Chain Link Fences and Gates" in addition to plans, details and notes provided in Drawings.
2. Moving existing outfield fence includes (but are not limited to) the following:
 - i) Reuse and reinstall existing top rails.
 - ii) Reuse and reinstall existing chain link mesh.
 - iii) Install new corner and line posts.
 - iv) Install new concrete fence post footings.
3. Measurement and payment shall be made on the basis of a lump sum bid price for all materials, labor and incidentals necessary to complete the Work.

UNIT PRICE BID

Bidder agrees that, in case additional work or materials installation is authorized by the Owner, the following unit prices will be used in adjusting the contract price. These unit prices shall include all overhead, profit, taxes, material, labor, etc., for a complete installation. Unit prices for adjusting the contract price for less work or materials installation will be ninety (90%) percent of these amounts.

5-inch conc. paving on compacted subgrade, complete and in place, per sq. ft.	\$
Concrete curb on backstop wall, complete and in place, per linear. ft.	\$
6-foot Ht. chain link fence, complete and in place, per linear. ft.	\$
6-inch depth topsoil with compost, complete and in place, per square foot	\$
Solid sod, as specified, complete and in place, per sq. ft.	\$
Rotor irrigation zone modifications, complete and in place, per square ft.	\$
2-inch electric irrigation valve, complete and in place, per each.	\$
2-inch brass ball valve, complete and in place, per each.	\$

9. Each bidder shall include the following information in this Proposal:

- Anticipated cost of materials to be incorporated in the construction of this Project.
- Anticipated cost of labor, profit, and all other costs for this Project.

	<u>Cost of Materials Incorporated into this Project</u>	<u>Cost of Labor, Profit, etc.</u>	<u>Owner's Contingency</u>	<u>Total Amount Base Bid</u>
Base Bid	\$ _____	\$ _____	\$ _____	\$ _____

	<u>Cost of Materials Incorporated into this Project</u>	<u>Cost of Labor, Profit, etc.</u>	<u>Total Amount Deduct Alternate One</u>
Bid Deduct Alternate One	\$ _____	\$ _____	\$ _____

10. Each Bidder is required to provide a list of proposed subcontractors, the type of Work to be completed by each such subcontractor and the approximate percentage of contract labor to be completed by each subcontractor. Owner reserves the right to accept or reject any subcontracts and/or amount subcontracted.

Schedule of Subcontracts

	<u>Subcontractor's Name</u>	<u>Type of Work</u>	<u>% of Work</u>
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
Total % of Work Subcontracted			_____

If additional space is necessary to provide a complete listing, please attach such additional pages as may be required.

11. In connection with the major items of materials to be furnished and installed, the particular supplier of equipment and materials, which the undersigned proposed to furnish will be listed in the schedule of Major Material Suppliers found below.

Schedule of Major Materials

	Supplier's Name	Major Items of Materials to be Furnished and Installed
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____

If additional space is necessary to provide a complete listing, please attach such additional pages as may be required.

12. The successful bidder shall furnish a Performance Bond and Payment Bond, on the forms which are attached hereto, in the amount of 100 percent of the contract price from an approved surety company holding a permit from the State of Texas to act as surety (and acceptable according to the latest list of companies holding certificates of authority from the Secretary of the Treasury of the United States) or other surety or sureties acceptable to the OWNER.

In addition, the undersigned will furnish a Maintenance Bond in the amount of 100 percent of the contract sum covering defects of material and workmanship for two (2) calendar years following the Owner's approval and acceptance of the construction.

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

14. The undersigned certifies that the bid prices contained in this Proposal have been carefully checked and are submitted as correct and final.

NOTE: Unit and lump sum prices must be shown in words and figures for each item listed in this Proposal, and in the event of discrepancy, the words shall prevail. In case of ambiguity or lack of clearness in stating prices in the Proposal, the Owner reserves the right to accept the most advantageous construction thereof to the Owner or to reject the bid.

This is a Proposal of _____, a corporation organized and existing under the laws of the State of _____, or a limited partnership organized and existing under the laws of the State of _____, or a

partnership, consisting of _____ or an
Individual doing business as _____.

Seal and Authorization
(If a Corporation)

(Signed)

(Title)

(Street Address)

(City and State)

(Telephone Number)

(Date)

QUALIFICATIONS STATEMENT

CONTRACTOR shall show that he has experience with similar projects that require working at a similar scale and within similar timeframes which will require planning work efforts and means and methods accordingly. CONTRACTOR shall submit a complete list of ALL Municipal and Similar Non-Municipal current and completed projects for the past three (3) years for review. This list shall include the names of project superintendents and project scale, cost, and schedule information.

General Contact Information

Respondent Name and Title: _____

Company: _____

Company Address: _____

Telephone Number: _____

Fax Number: _____

Email Address: _____

Federal Tax ID: _____

Previous Company Names Used or Companies Acquired Within the Previous 10 Years:

Liability Insurance Provider and Limits of Coverage: _____

Workers Compensation Insurance Provider: _____

Surety (Performance and Payment): _____

Address: _____

Contact and Phone: _____

Superintendent and Backup Superintendent: Attach Work Resume on separate sheet(s). The superintendent shall be able to communicate in English and not operate any equipment and have not had any verified job safety violations in the past five years. Attach additional sheet(s) to verify safety record as required. Any variations shall be reviewed by CITY for approval or denial. A job site shall be shut down if proper supervision is not provided.

Superintendent Name

Backup Superintendent Name

Safety Record – List ALL Verified Violations for Superintendent and Backup Superintendent with explanation, date and action taken to correct future safety violations:

Superintendent

Backup Superintendent

Total Number of Employees to be Associated with this Job: _____

Managerial_____ Administrative_____ Professional_____

Skilled_____ Semi-Skilled_____ Other_____

Percentage of work anticipated to be done by Bidder's Employees
(Based on Dollars Bid): _____

Percentage of work anticipated to be done by Bidder's Subcontractors
(Based on Dollars Bid): _____

Type(s) of work to be done by Bidder's Employees (examples: demolition, masonry, structural steel, drywall, carpentry, millwork, finishes, flooring, framing, concrete paving, structural concrete, waterlines, sanitary sewer lines, storm pipe, storm inlets, excavation, etc.)

Number of Years in Business as a Contractor on Above Types of Works: _____

Information and Type(s) of Work to be done by Sub-Contractors: Include name, address, phone number, references and similar work experience of each sub-contractor. Use additional sheets if needed.

Type of Work

Sub-Contractor

Previous Projects: List of completed projects of similar type work for the past five (5) years. (Use additional sheets if necessary.)

1. Project: _____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain: _____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain: _____

Detailed Project Description: _____

Owner/Agency: _____

Year Started: _____ Contract Price: _____

Contact Person: _____ Phone: _____

2. Project: _____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain: _____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain: _____

Detailed Project Description: _____

Owner/Agency: _____

Year Started: _____ Contract Price: _____

Contact Person: _____ Phone: _____

3. Project: _____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain: _____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain: _____

Detailed Project Description: _____

Owner/Agency: _____

Year Started: _____ Contract Price: _____

Contact Person: _____ Phone: _____

4. Project: _____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain: _____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain: _____

Detailed Project Description: _____

Owner/Agency: _____

Year Started: _____ Contract Price: _____

Contact Person: _____ Phone: _____

5. Project: _____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain: _____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain: _____

Detailed Project Description: _____

Owner/Agency: _____

Year Started: _____ Contract Price: _____

Contact Person: _____ Phone: _____

Current Projects: List active projects of similar type work:

1. Project: _____

Percent Complete: _____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain: _____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain: _____

Detailed Project Description: _____

Owner/Agency: _____

Year Started: _____ Contract Price: _____

Contact Person: _____ Phone: _____

2. Project: _____

Percent Complete: _____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain: _____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain: _____

Detailed Project Description: _____

Owner/Agency: _____

Year Started: _____ Contract Price: _____

Contact Person: _____ Phone: _____

3. Project: _____

Percent Complete: _____

Any Litigation Issues: Yes or No (Circle One) If Yes, explain: _____

Any Verified Safety Violations: Yes or No (Circle One) If Yes, explain: _____

Detailed Project Description: _____

Owner/Agency: _____

Year Started: _____ Contract Price: _____

Contact Person: _____ Phone: _____

References: Use a separate sheet if needed.

Trade references (List Company, Address, Contact Person, and Phone):

Bank References (List Institution, Address, Contact Person, and Phone)

Municipal References (List Municipality, Address, Contact Person, and Phone)

Claims and Suits (if the answer to any of the following questions is yes, please attach details):

1. Has your organization ever failed to complete any work awarded to it? _____
2. Are there any judgments, claims, arbitration proceedings, or suits pending or outstanding against your organization or officers? _____
3. Has your organization filed any lawsuits or requested arbitration with regard to construction contracts within the last five years? _____
4. Within the last five (5) years, has any officer or principal of your organization ever been an officer or principal of another organization when it failed to complete a construction contract?

The undersigned agrees that the information provided is accurate and complete.

Authorized Signature

Title

Print/Type Name

Date

HISTORICALLY UNDERUTILIZED BUSINESS (HUB) QUESTIONNAIRE

A Historically Underutilized Business (HUB) is a for-profit entity that has not exceeded the size standards prescribed by 34 TAC §20.23, and has its principal place of business in Texas, and is at least 51% owned by an Asian Pacific American, Black American, Hispanic American, Native American, American woman and/or Service Disabled Veteran, who reside in Texas and actively participate in the control, operations and management of the entity's affairs.

1. Is your business a certified historically underutilized business (HUB) or Disadvantaged Business Enterprise (DBE)?

☐

Yes

☐

No

2. Please provide the certifying agency name:

Certifying Agency: _____

3. I have included a copy of my certification as an attachment to my proposal:

☐

Yes

☐

No

By my signature I affirm the information provided on this form is accurate to the best of my knowledge.

Authorized Signature

Title

Print/Type Name

Date

NO BOYCOTT VERIFICATION FORM

I, _____, the undersigned representative of
(Individual's Name)

_____,
(Business or Company)

Hereinafter referred to as "Company", does hereby verify that the company named above, under the provisions of the laws of the United States and the State of Texas:

1. Does not boycott Israel currently; and
2. Will not boycott Israel during the term of the contract.
3. Does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association; and (2) will not discriminate during the term of the contract against a firearm entity or firearm trade association.
4. Does will not business with Iran, Sudan or a foreign terrorist organization while providing services to the City.

By my signature I affirm the information provided on this form is accurate to the best of my knowledge.

Authorized Signature

Title

Print/Type Name

Date

SECTION 01 10 00 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Work covered by Contract Documents.
 - 2. Contractor use of site and premises.
 - 3. Owner occupancy.
- B. Related Requirements:
 - 1. Other Division 01 Specification Sections apply to Work of this Section.
 - 2. Section 01 30 00 "Administrative Requirements" for Project information management.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. Identification: Porter Park Softball Field Renovations.
- B. Location: Sanger, Texas.
- C. Without force or effect, Work of Project consists of demolition, earthwork, fencing, infield surfacing, foul poles, scoreboards, concrete sidewalk replacement, ADA striping, turfgrass, and irrigation.

1.3 CONTRACTOR USE OF SITE AND PREMISES

- A. Limit use of site and premises to allow:
 - 1. Owner occupancy.
 - 2. Use of site and premises by public.
- B. Construction Operations: Limited to softball fields. Contractor shall keep existing perimeter concrete trails and playground open to general public.
- C. Time Restrictions for Performing Work: Weekdays 7 a.m. to 6 p.m., unless otherwise approved by Owner.
 - 1. Utility Outages and Shutdown: Coordinate and schedule utility outages/shutdown
 - 2. Allowed only at previously-agreed-upon times.
 - 3. Schedule at least 1 week before outage/shutdown.
 - 4. Submit outage/shutdown request to Architect and Owner itemizing dates, times, and durations of early requested outage/shutdown.

1.4 OWNER OCCUPANCY

- A. Owner will occupy premises during construction to conduct normal operations.
- B. Cooperate with Owner to minimize conflict, and to facilitate Owner's operations.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 20 00 - PRICE AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Material allowances.
 - 2. Contingency allowance.
 - 3. Inspection and testing allowances.
 - 4. Schedule of Values.
 - 5. Application for Payment.
 - 6. Change Procedures.
 - 7. Alternates.
- B. Related Requirements:
 - 1. Other Division 01 Specification Sections apply to Work of this Section.
 - 2. Section 01 30 00 "Administrative Requirements" for Project information management.
 - 3. Section 01 60 00 "Product Requirements" for product substitutions.

1.2 CONTINGENCY ALLOWANCE

- A. Include stipulated sum of \$36,000.00 for use upon Owner's instruction.
- B. Costs Not Included in Contingency Allowance, but included in Contract Sum/Price: Bonds, project insurance (workers comp, auto, general liability, builders risk and other insurances required by Owner/Contractor agreement), overhead, profit, and other expenses contemplated for stated allowance amounts.
- C. Funds will be drawn from Contingency Allowance only by Change Order.
- D. At closeout of Contract, funds remaining in Contingency Allowance will be credited to Owner by Change Order.

1.3 SCHEDULE OF VALUES

- A. Submit typed schedule on AIA Form G703 - Application and Certificate for Payment Continuation Sheet.
- B. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement.
- C. Format: Utilize Table of Contents of this Project Manual. Identify each line item with number and title of major specification Section . Identify site mobilization, general conditions, bonds, and insurance as separate line items.
- D. Include within each line item, a directly proportional amount of Contractor's overhead and profit.
- E. Revise schedule to list approved Change Orders, with each Application for Payment.

1.4 APPLICATIONS FOR PAYMENT

- A. Submit notarized application on AIA Form G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet.
- B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.

- C. Deposits on Material, Equipment or Products:
 - 1. Material/Equipment Deposits: Owner will not pay for deposits for material, equipment or products that may be required of Contractor in order to start the fabrication process of work that will eventually be incorporated into the Project but are not actually on the Project site. All material, equipment or products must be on the Project site and properly stored before Owner will make payment to Contractor.
 - 2. The Owner will make payment for materials, equipment or products that are properly delivered and stored on the Project site for subsequent incorporation into the Project as authorized in Owner-Contractor Agreement.
 - 3. Owner may consider payment of materials, equipment or products that are properly stored, secured and insured in a third party warehouse within a fifty (50) mile radius of the Project site that are in accordance with the requirements and authorized in Owner-Contractor Agreement.
- D. Payment Period: As defined in Owner-Contractor agreement.
- E. A complete application for payment includes one copy of waiver of liens from each subcontractor, Construction progress schedule, and submittal schedule, all which are required to process the Application for Payment.

1.5 CHANGE PROCEDURES

- A. Architect will advise of minor changes in Work not involving an adjustment to Contract Sum/Price or Contract Time as authorized by Owner/Contractor Agreement by issuing Architect's Supplemental Instructions on Architect's Standard Supplemental Instruction form.
- B. Architect may issue a Construction Change Request which includes a detailed description of a proposed change with supplementary or revised Drawings and Specifications and a change in Contract Time for executing change. Contractor will prepare and submit an estimate within seven days.
- C. Contractor may propose a change by submitting request for change to Architect. Include reason for change and effect on Contract Sum/Price, Contract Time, and subcontractors. Document requested substitutions in accordance with Section 01 60 00 "Product Requirements."
- D. Stipulated Sum/Price Change Order: Based on Proposal Request and Contractor's fixed price quotation or Contractor's request for a Change Order as approved by Architect.
- E. Unit Price Change Order: For pre-determined unit prices and quantities, Change Order will be executed on a fixed unit price basis. For unit costs or quantities of units of work which are not pre-determined, execute Work under a Construction Change Directive. Changes in Contract Sum/Price or Contract Time will be computed as specified for Time and Material Change Order.
- F. Construction Change Directive: Architect may issue a directive, on AIA Form G713 Construction Change Directive signed by Owner, instructing Contractor to proceed with a change in Work, for subsequent inclusion in a Change Order. Document will describe changes in Work, and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute change.
- G. Time and Material Change Order:
 - 1. Submit itemized account and supporting data after completion of change, within time limits indicated in Conditions of the Contract.
 - 2. Architect will determine change allowable in Contract Sum/Price and Contract Time as provided in Contract Documents.
 - 3. Maintain detailed records of work done on Time and Material basis.
 - 4. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in Work.

- H. Change Order Forms: AIA G701 Change Order.
- I. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in Conditions of the Contract.
- J. Change Order: Furnish an itemized breakdown, in form acceptable to Architect of costs and supporting information including but not limited to quantities and material prices. Tier subcontracted work performed at labor rates, employer payments, and rental rates. Itemize breakdown detail shall be same for subcontractor work. Provide complete supporting information for profit and overhead or markups used when requested. Consider the following items a part of overhead or Contractor's and subcontractor's mark-up and do not include as separate cost item: Labor for Superintendents, Assistant Superintendents, home office personnel, timekeepers, and maintenance mechanics at any level of contracting; individual pieces of equipment, hand tools or instruments having a new value of \$500.00 or less, whether or not consumed by use; on site and main offices; modification to record Contract Documents; nor guarantee period costs.

1.6 MEASUREMENT AND PAYMENT - UNIT PRICES

- A. Authority: Measurement methods are delineated in individual Specification Sections.
- B. Take measurements and compute quantities. Architect will verify measurements and quantities.
- C. Payment Includes: Full compensation for required labor, products, tools, equipment, plant, transportation, services, and incidentals; erection, application or installation of an item of Work; insurance, overhead, and profit.
- D. Defect Assessment: Replace Work, or portions of Work, not conforming to specified requirements. If Owner agrees that it is not practical to remove and replace Work, Architect will direct an appropriate remedy or adjust payment.

1.7 ALTERNATES

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected by Owner. Accepted Alternates will be identified in Owner-Contractor Agreement.
- B. Coordinate related work and modify surrounding work as required.
- C. Schedule of Alternates:
 - 1. Deduct Alternate No. 1: Move existing outfield fence to new 225-foot outfield fence location identified on Drawings. Contractor shall reuse top and bottom rails and mesh. Contractor shall install new fence posts, clips, and concrete footings.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 30 00 - ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Project Information Management.
 - 2. Coordination.
 - 3. Survey.
 - 4. Electronic drawing file (digital data) request.
 - 5. Submittal schedule.
 - 6. Preconstruction meeting.
 - 7. Request for information.
 - 8. Site mobilization meeting.
 - 9. Progress meetings.
 - 10. Preinstallation meetings.
 - 11. Cutting and patching.
 - 12. Alteration Project procedures.
- B. Related Sections:
 - 1. Other Division 01 Specification Sections apply to Work of this Section.

1.2 PROJECT INFORMATION MANAGEMENT

- A. Project Website:
 - 1. Use Newforma Info Exchange; <https://projects.team-psc.com/UserWeb/Login> to send and receive Project information.
 - 2. Contact Architect to setup name and password information.
 - 3. If this Project is not listed when logged in, contact Architect to add this Project to your account.
- B. Project information includes, but is not limited to, the following:
 - 1. Product Submittals.
 - 2. Requests for Information (RFI).
 - 3. Applications for Payment.
 - 4. Schedules.
 - 5. Construction Change Requests (CCRs).
 - 6. Closeout Documents.
 - 7. Construction Document Files.
 - a. Weather Days.
 - b. Electronic File Requests.
 - c. Correspondence.
 - d. Test Reports.
 - e. Meeting Minutes.
 - f. Field Reports.

1.3 COORDINATION

- A. Coordinate scheduling, submittals, and Work to assure efficient and orderly sequence of installation of construction elements.
- B. Verify that utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- C. Coordinate space requirements and installation of mechanical and electrical work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- D. In finished areas, except as otherwise indicated, conceal pipes, ducts, and wiring within construction. Coordinate locations of fixtures and outlets with finish elements.
- E. Items which require electrical connections shall be coordinated with anufacturer's stated Electrical Requirements for:
 - 1. Voltage.
 - 2. Phase.
 - 3. Ampacity.
 - 4. Number and size of wires.
 - 5. Wiring diagrams.
 - 6. Starter size, details, and location.
 - 7. Control devices and details.
- F. Coordinate completion and clean-up of Work of separate Sections in preparation for Substantial Completion .
- G. After Owner occupancy of premises, coordinate access to site with Owner for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.4 SURVEY

- A. Employ surveyor registered in the State of Texas to locate survey control and reference points.
- B. Protect survey control and reference points.
- C. Control datum for survey is that shown on Drawings.
- D. Verify set-backs and easements, and confirm Drawing dimensions and elevations.
- E. Provide field surveying services. Establish elevations, lines, and levels, utilizing recognized surveying practices.
- F. Submit registered site drawing and certificate signed by registered surveyor that elevations and locations of Work are in conformance with Contract Documents.

1.5 ELECTRONIC DRAWING FILE (DIGITAL DATA) REQUEST

- A. During Procurement Phase:
 - 1. Bidders and Proposers may purchase a Digital Data file. Digital Data file will be provided in software release currently used by Primary Designer. File will be provided via Primary Designer's Project website.

2. AutoCAD drawing files (.dwg) are available for purchase from Primary Designer upon request. Cost of files are indicated below plus applicable tax.
 - a. 1 - 3 Sheets: \$100.00 per sheet.
 - b. 4 - 6 Sheets: \$400.00 flat fee.
 - c. 7 - 9 Sheets: \$500.00 flat fee.
 3. Prior to delivery of file(s), purchaser shall sign a Digital Data Licensing Agreement. Payment for Digital Data file(s) shall occur upon delivery of file to purchaser.
 4. Digital Data file(s) shall be used only for preparing Bids and Proposals required by this Project and shall not be used in any other form, in whole or in part.
- B. Upon Award of Contract:
1. Contractor shall sign a Digital Data Licensing Agreement (AIA C106-2013) for the release of electronic files. Upon Contractor submitting the executed Agreement to the Primary Designer, the Primary Designer will provide Contractor one (1) electronic copy of the AutoCAD (.dwg) file(s), and Portable Document Format (.pdf) file(s) within 5 working days. Files and Formats to be as follows:
 - a. Landscape: Overall master file in AutoCAD format.
 - 1) Overall Site Plan with grading, flatwork, irrigation, and planting plans.
 - 2) All details, detail annotation and references are omitted and not part of the AutoCAD file.
 2. Conformed Construction Documents: If Conformed Construction Documents are required by Owner/Primary Designer Agreement, they will be provided in PDF. Conformed Construction Documents are the Drawings and Specifications modified to include any Addenda issued before execution of the Contract.
 - a. To the extent Conformed Construction Documents are provided to Contractor, the following provisions shall apply:
 - 1) The Conformed Construction Documents and related information contained therein, are provided for Contractor's convenience only, and does not relieve Contractor from the requirements of the Contract Documents. Specifically, to the extent that any discrepancy or conflict exists between the Issue for Bid documents, including any Addenda issued prior to execution of the Contract or Modifications issued after the execution of the Contract on the one hand, and the Conformed Construction Documents on the other; the Issue for Bid documents, Addenda, and Modifications shall control unless otherwise specified in writing by the Primary Designer.
 - 2) Contractor shall not use such drawings, documents, or other data, in whole or in part, for any purpose or project other than this Project in the preparation of Shop Drawings and other submittals.
 - 3) Contractor acknowledges that such drawings, documents, and other data are subject to change or modification. Contractor shall be responsible for updating any drawings, documents, or other data obtained prior to use by them for any purpose.
 - 4) Any Conformed Construction Documents, including any Drawings, Specifications, documents, or other data related thereto are provided "as is" without representation or warranty by Primary Designer, either expressed or implied.

- 5) Contractor acknowledges that Conformed Construction Documents provided by Primary Designer are as a courtesy to Contractor, at their specific request, and accordingly, CONTRACTOR HEREBY AGREES TO RELEASE, HOLD HARMLESS, DEFEND AND INDEMNIFY PRIMARY DESIGNER AND OWNER FROM ANY AND ALL CLAIMS, DEMANDS, OR CAUSES OF ACTION, WHICH CONTRACTOR OR ANY THIRD PARTY MAY HAVE BY REASON OF ANY INJURY OR DAMAGE SUSTAINED BY CONTRACTOR OR THIRD PARTY ARISING OUT OF OR IN ANY WAY RELATED TO THE USE OF SUCH CONFORMED CONSTRUCTION DOCUMENTS.

1.6 SUBMITTAL SCHEDULE

- A. Prepare submittal schedule in accordance with General Conditions of the Contract for Construction.
- B. Include in submittal schedule all submittals and samples required by all section of this Project Manual and any additional submittals required by Contractor to construct the Project.
- C. Submit submittal schedule for Architect's review within 15 days after date established in Notice to Proceed or with the first Application for Payment, whichever is sooner. Failure to submit submittal schedule with the first Application for Payment will be cause for not processing Application for Payment.

1.7 PRECONSTRUCTION MEETING

- A. Architect will schedule a meeting after Notice to Proceed.
- B. Attendance Required:
 1. Owner.
 2. Architect.
 3. Contractor.
 4. Major subcontractors.
- C. Agenda:
 1. Submission of executed bonds and insurance certificates.
 2. Distribution of Contract Documents.
 3. Submission of list of subcontractors, list of products, Schedule of Values, submittal schedule, and progress schedule.
 4. Designation of personnel representing each party in Contract and Architect.
 5. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, Request for Information (RFI), and Contract closeout procedures.
 6. Review Notice to Proceed (NTP) and Substantial Completion Dates.
 7. Surface drainage requirements (SWPPP).
 8. Scheduling:
 - a. Use of premises by Owner and Contractor.
 - b. Owner's requirements and occupancy.
 - c. Survey and building layout.
 - d. Security and housekeeping procedures.
 - e. Construction progress meetings.
 - f. Procedures for testing.
 - g. Procedures for maintaining record documents.

- h. Requirements for start-up of equipment.
 - i. Inspection and acceptance of equipment put into service during construction period.
- 9. Scheduling activities of Construction Material Testing (CMT) lab.
- D. Record minutes and distribute copies within 3 days after meeting to participants with two copies to Architect and those affected by decisions made.

1.8 REQUEST FOR INFORMATION

- A. Request for information (RFI) requests from subcontractors or material suppliers will not be considered. All RFI's must be submitted by Contractor.
- B. RFI's must be submitted to Architect via software as indicated in paragraph 1.2.A
- C. Information indicated on RFI shall be complete before submission. If Architect determines that request can be answered with information provided, Architect will assign an RFI tracking number. Requests determined by Architect not to be an RFI will be returned to Contractor electronically and deleted from Architect's electronic tracking software without being assigned an RFI tracking number. A transmittal document returning the denied RFI request will be provided with a response indicating action to be taken by Contractor.
- D. RFIs may contain more than one item when items are related issues. Otherwise, only one item shall be addressed on each RFI request.
- E. Allow seven (7) days for Architect's response to each RFI.
- F. Response to RFI will be issued to Contractor and Owner per Section 01 33 00 "Submittal Procedures."
- G. Responses from Architect are not changes unless issued with a change per Section 01 20 00 "Price and Payment Procedures."

1.9 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of Work at minimum bi-monthly intervals.
- B. Make arrangements for meetings, prepare agenda with copies for participants, and preside at meetings.
- C. Attendance Required:
 - 1. Owner.
 - 2. Job superintendent.
 - 3. Major subcontractors.
 - 4. Suppliers.
 - 5. Architect as appropriate to agenda topics for each meeting.
- D. Agenda:
 - 1. Review minutes of previous meetings.
 - 2. Review of Work progress.
 - 3. Field observations, problems, and decisions.
 - 4. Identification of problems which impede planned progress.
 - 5. Review of submittals schedule and status of submittals.
 - 6. Review of off-site fabrication and delivery schedules.
 - 7. Maintenance of progress schedule.
 - 8. Corrective measures to regain projected schedules.
 - 9. Planned progress during succeeding work period.
 - 10. Coordination of projected progress.
 - 11. Maintenance of quality and work standards.
 - 12. Effect of proposed changes on progress schedule and coordination.
 - 13. Other business relating to Work.

- E. Record minutes, and distribute copies within 3 days to Architect, participants, and those affected by decisions made.

1.10 PREINSTALLATION MEETING

- A. When required in individual specification Sections, convene a preinstallation meeting at site prior to installing Work.
- B. Require attendance of parties directly affecting, or affected by, Work.
- C. Notify Architect 4 days in advance of meeting date.
- D. Prepare agenda and preside at meeting.
 - 1. Review conditions of installation, preparation and installation procedures.
 - 2. Review coordination with related work.
- E. Record minutes, and distribute copies within three days after meeting to participants, with 3 copies to Architect.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual Specification Sections.
- D. Verify that utility services are available, of correct characteristics, and in correct location.

3.2 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply any manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.3 CUTTING AND PATCHING

- A. Employ skilled and experienced installer to perform cutting and patching.
- B. Submit request in advance of cutting or altering elements which affects:
 - 1. Structural integrity of element.
 - 2. Integrity of weather-exposed or moisture-resistant elements.
 - 3. Efficiency, maintenance, or safety of element.
 - 4. Visual qualities of sight-exposed elements.
 - 5. Work of Owner or separate contractor.
- C. Execute cutting, fitting, and patching including excavation and fill, to complete Work, and to:
 - 1. Fit several parts together, to integrate with other Work.
 - 2. Uncover Work to install or correct ill-timed Work.
 - 3. Remove and replace defective and non-conforming Work.

- 4. Remove samples of installed Work for testing.
- 5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.
- D. Execute Work by methods which will avoid damage to other Work, and provide proper surfaces to receive patching and finishing.
- E. Cut rigid materials using masonry saw or core drill.
- F. Restore Work with new products in accordance with requirements of Contract Documents.
- G. Fit Work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- H. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.
- I. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection. For an assembly, refinish entire unit.
- J. Identify any hazardous substance or condition exposed during Work to Architect for decision or remedy.

3.4 ALTERATION PROJECT PROCEDURES

- A. Materials: As specified in product Sections; match existing products and work for patching and extending work.
- B. Employ skilled and experienced installer to perform cutting and patching.
- C. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.
- D. Remove, cut, and patch work in a manner to minimize damage and to provide a means of restoring products and finishes to original condition unless otherwise specified.
- E. Refinish visible existing surfaces to remain in renovated rooms and spaces, to specified condition for each material, with a neat transition to adjacent finishes.
- F. Where new work abuts or aligns with existing, perform a smooth and even transition. Patched work to match existing adjacent work in texture and appearance.
- G. When finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and submit recommendation to Architect for review.
- H. Where a change of plane of 1/4-inch or more occurs, submit recommendation for providing a smooth transition for Architect review.
- I. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.
- J. Finish surfaces as specified in individual product Sections.

END OF SECTION

SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Submittal procedures.
 - 2. Resubmittal requirements.
 - 3. Construction progress schedules.
 - 4. Proposed products list.
 - 5. Shop drawings.
 - 6. Product data.
 - 7. Samples.
 - 8. Design data.
 - 9. Test reports.
 - 10. Certificates.
 - 11. Manufacturers' instructions.
 - 12. Manufacturers' field reports.
 - 13. Erection drawings.
 - 14. Construction photographs.
- B. Related Requirements:
 - 1. Other Division 01 Specification Sections apply to Work of this Section.
 - 2. Section 01 30 00 "Administrative Requirements" for Project information management.
 - 3. Section 01 40 00 "Quality Requirements" for manufacturers' field services and reports; Testing Laboratory Services.
 - 4. Section 01 70 00 "Execution and Closeout Requirements" for Contract warranty, manufacturer's certificates, and closeout submittals.

1.2 SUBMITTAL PROCEDURES

- A. Submit to Architect for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
- B. Produce copies and distribute in accordance with this Article.
- C. Use Project website to submit record documents as described in Section 01 70 00 "Execution and Closeout Requirements."
- D. Transmit each submittal separately with Contractor's standard transmittal letter including Contractor's name, address, and phone number. Each submittal shall contain only one Specification Section.
- E. Sequentially number transmittal forms using Section number or Contractors other sequential numbering system.
- F. Identify Project, Contractor, subcontractor, or supplier; pertinent drawing sheet and detail number(s), and Specification Section number appropriate to submittal.
- G. Apply Contractor's stamp, signed or initialed certifying that review, verification of products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with requirements of Work and Contract Documents.
- H. Schedule submittals to expedite Project, and deliver to Architect. Coordinate submission of related items.

- I. For each submittal for review, allow 15 days excluding delivery time to and from Contractor.
- J. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of completed Work. Information, comments, field verifications, responses, or other notations marked on submittals by Contractor shall be done in blue or green colors only.
- K. Allow space on submittals for Contractor and Architect's review stamps.
- L. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.
- M. Submittals not requested will not be recognized or processed.
- N. Format:
 - 1. Submit all submittals digitally using .PDF file extension. Each submittal shall be a single .PDF file including transmittal letter. Multiple files for same submittal will not be accepted.
 - 2. Submittals in any other format, including .ZIP files, will be rejected.
 - 3. Hard copies will not be accepted.
 - 4. To ensure each page is legible, .PDF pages of drawings shall be same size/scale as a hard copy. Where applicable, scale symbols should be provided to indicate scale. Illegible submittals will be rejected.
 - 5. Uploaded submittals to Project website.
- O. Submittal procedures described in this Article applies to construction progress schedule, products list, shop drawings, product data, samples (actual samples and digital files of same), design data, test reports, certificates, manufacturer's instructions and field reports, erection drawings, and any other type of submittal submitted to Architect.

1.3 RESUBMITTAL REQUIREMENTS

- A. Revise and resubmit submittals, as required, and resubmit to meet requirements as specified and as noted on submittal reviews.
- B. Mark as RESUBMITTAL.
- C. Re-use original transmittal number and supplement with sequential alphabetical or numeric suffix for each re-submittal.

1.4 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial progress schedule for Architect's review within 15 days after date established in Notice to Proceed or with the first Application for Payment, whichever is sooner.
- B. Revise and resubmit as required.
- C. Submit revised schedule with each Application for Payment, identifying changes since previous version.
- D. Submit a horizontal bar chart with separate line for each section of Work, identifying first work day of each week.
- E. Indicate product/material manufacturer's lead-time for delivery to site. Include as a separate line for each product/material.
- F. Indicate estimated percentage of completion for each item of Work at each submission.

- G. Dates reviewed submittals will be required from Architect. Indicate decision dates for selection of finishes. Submit separate schedule of submittal dates for following:
 - 1. Shop drawings.
 - 2. Product data.
 - 3. Samples.
 - 4. Owner furnished products.
 - 5. Products identified under Allowances.
- H. Determine appropriate lead times to allow for manufacturing and delivery of products/material for incorporation into Work. Indicate product/material manufacturer's lead-time for manufacturing and delivery to site. Include as a separate line for each product/material. Failure to timely submit and process submittals, and ordering of products/materials for delivery to site will not be grounds for approval of substitutions for other products/materials.
- I. Revisions to Schedules:
 - 1. Indicate progress of each activity to date of submittal, and projected completion date of each activity.
 - 2. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
 - 3. Prepare narrative report to define problem areas, anticipated delays, and impact on Schedule. Report corrective action taken, or proposed, and its effect.

1.5 SHOP DRAWINGS

- A. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- B. Printable Image Size: Minimum 8-1/2 by 11 inches and maximum 30 by 42 inches.
- C. Draw details to a minimum scale of 1/2-inch equal to 1 foot.
- D. Draw site plans to same scale indicated on Contract Drawings.
- E. Draw other plans to a minimum scale of 1/8-inch equal to 1 foot.
- F. Construction Documents (electronic or paper format) issued by Architect cannot be used in any shape, form, or fashion in creation and development of shop drawings, except that electronic files containing floor plans or site plans which have been acquired from Architect may be used as backgrounds for Contractor, subcontractors, sub-subcontractors, and material suppliers in shop drawing process.
- G. In creation and publication of shop drawings, under no circumstances shall Design Professional's seal or title block of drawing be reproduced. Shop drawings must be original works from Contractor, subcontractors, sub-subcontractors, and material suppliers.

1.6 PRODUCT DATA

- A. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to this Project.
- B. Include recommendations for application and use, and reference to compliance with specified standards of trade associations and testing agencies.
- C. Include notation of special coordination requirements for interfacing with adjacent work and building utilities where applicable.
- D. After review, distribute in accordance with "Submittal Procedures" Article above and provide copies for Record Documents described in Section 01 70 00 "Execution and Closeout Requirements."

1.7 SAMPLES

- A. Submit samples to illustrate functional and aesthetic characteristics of product, with integral parts and attachment devices. Accompany physical sample with color digital image (photo or scanned .PDF) of sample. Coordinate sample submittals for interfacing work.
- B. Unless otherwise specified, submit samples of finishes from manufacturers' full range of standard colors, textures, and patterns, for Architect's selection.
- C. Where variations in color, pattern, or texture are inherent in material or product, submit multiple samples to indicate approximate range or variations.
- D. Include full Project information and identification of manufacturer, model number, type, style and color on each sample.
- E. Submit number of samples specified in individual Specification Sections; one of which will be retained by Architect.
- F. Reviewed samples which may remain as part of Work are indicated in individual Specification Sections.
- G. Samples will not be used for testing purposes unless specifically stated in individual Specification Sections.

1.8 DESIGN DATA

- A. Submit for Architect's knowledge as Contract Administrator or for Owner.
- B. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.9 TEST REPORTS

- A. Submit for Architect's knowledge as Contract Administrator or for Owner.
- B. Submit test reports for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.10 CERTIFICATES

- A. When specified in individual Specification Sections, submit certification by manufacturer, installation/application subcontractor, or Contractor to Architect.
- B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.

1.11 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual Specification Sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing.
- B. Identify conflicts between manufacturers' instructions and Contract Documents.
- C. Indicate special procedures, conditions requiring special attention and special environmental criteria required for application or installation.

1.12 MANUFACTURER'S FIELD REPORTS

- A. Submit reports for Architect's benefit as Contract Administrator or for Owner.
- B. Submit report within 30 days of observation to Architect for information.
- C. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.13 ERECTION DRAWINGS

- A. Submit drawings for Architect's benefit as Contract Administrator or for Owner.
- B. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.
- C. Data indicating inappropriate or unacceptable Work may be subject to action by Architect or Owner.

1.14 CONSTRUCTION PHOTOGRAPHS

- A. Each month submit photographs to Architect with Application for Payment.
- B. Photographs:
 - 1. Format: JPEG file extension; color.
 - 2. Subject:
 - a. Take 10 site photographs from differing directions indicating relative progress of Work, 5 days maximum prior to submitting pay request.
- C. Identify photographs with date, time, orientation, and Project identification.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Quality control and control of installation.
 - 2. Tolerances.
 - 3. References.
 - 4. Mockup requirements.
 - 5. Testing and Inspection services.
 - 6. Manufacturers' field services.
 - 7. Examination.
 - 8. Preparation.
- B. Related Requirements:
 - 1. Other Division 01 Specification Sections apply to Work of this Section.
 - 2. Section 01 30 00 "Administrative Requirements" for Project information management.
 - 3. Section 01 33 00 "Submittal Procedures" for submission of manufacturers' instructions and certificates.
 - 4. Section 01 60 00 "Product Requirements" for requirements for material and product quality.

1.2 QUALITY CONTROL AND CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as a minimum quality for Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform Work by persons qualified to produce workmanship of specified quality.
- F. Verify field measurements are as indicated on shop drawings or as instructed by manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.3 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing in place.

1.4 REFERENCES

- A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date of Notice to Proceed, except where a specific date is established by Code.
- C. Obtain copy of standards when required by Specification Section.
- D. Neither contractual relationship, duties, nor responsibilities of parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference otherwise in any reference document.

1.5 TESTING AND INSPECTION SERVICES

- A. Owner will appoint, employ, and pay for specified services of an independent firm to perform inspection and testing.
- B. The independent firm will perform inspections, tests, and other services specified in individual Specification Sections and as required by Architect or Owner.
- C. Testing, inspections and source quality control may occur on or off Project site. Perform off-site testing as required by Architect or Owner.
- D. Submit independent testing laboratory firm's reports to Architect. Reports to include observations and results of tests and will indicate compliance or non-compliance with Contract Documents.
- E. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, provide safe access to Project site, and provide assistance by incidental labor as requested.
 - 1. Notify Owner, and independent firm 48 hours prior to expected time for operations requiring services.
 - 2. Pay for additional samples and tests required for Contractor's use.
- F. Employment of independent testing agency or laboratory does not relieve Contractor from performing Work to Contract requirements.
- G. Re-testing and/or re-inspection required because of non-conformance to specified requirements will be charged to Contractor by deducting re-testing and/or re-inspection charges from Contract Sum/Price.

1.6 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual Specification Sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, and startup of equipment, as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to Architect 30 days in advance of required observations. Observer subject to approval of Architect.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- D. Refer to Section 01 33 00 "Submittal Procedures," "Manufacturer's Field Reports" Article.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual Specification Sections.
- D. Verify utility services are available, of correct characteristics, and in correct locations.

3.2 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

END OF SECTION

SECTION 01 42 00 - REFERENCES

PART 1 - GENERAL

1.1 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.2 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
 - 1. For standards referenced by applicable building codes, comply with dates of standards as listed in building codes.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.3 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."
- B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Abbreviations and acronyms not included in this list shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States." The information in this list is subject to change and is believed to be accurate as of the date of the Contract Documents.
 - 1. AASHTO - American Association of State Highway and Transportation Officials; www.transportation.org.
 - 2. ACI - American Concrete Institute; (Formerly: ACI International); www.concrete.org.
 - 3. AEIC - Association of Edison Illuminating Companies, Inc. (The); www.aeic.org.
 - 4. AI - Asphalt Institute; www.asphaltinstitute.org.
 - 5. AIA - American Institute of Architects (The); www.aia.org.
 - 6. AISC - American Institute of Steel Construction; www.aisc.org.
 - 7. AISI - American Iron and Steel Institute; www.steel.org.
 - 8. ANSI - American National Standards Institute; www.ansi.org.
 - 9. ASCE - American Society of Civil Engineers; www.asce.org.
 - 10. ASTM - ASTM International; www.astm.org.
 - 11. AWS - American Welding Society; www.aws.org.
 - 12. CLFMI - Chain Link Fence Manufacturers Institute; www.chainlinkinfo.org.
 - 13. CRSI - Concrete Reinforcing Steel Institute; www.crsi.org.
 - 14. ECA - Electronic Components Association; (See ECIA).
 - 15. ECAMA - Electronic Components Assemblies & Materials Association; (See ECIA).
 - 16. ECIA - Electronic Components Industry Association; www.ecianow.org.
 - 17. EIA - Electronic Industries Alliance; (See TIA).
 - 18. IEEE - Institute of Electrical and Electronics Engineers, Inc. (The); www.ieee.org.
 - 19. IES - Illuminating Engineering Society; (Formerly: Illuminating Engineering Society of North America); www.ies.org.
 - 20. IESNA - Illuminating Engineering Society of North America; (See IES).
 - 21. NRMCA - National Ready Mixed Concrete Association; www.nrmca.org.
 - 22. NSPE - National Society of Professional Engineers; www.nspe.org.
- C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.
 - 1. ICC - International Code Council; www.iccsafe.org.
 - 2. ICC-ES - ICC Evaluation Service, LLC; www.icc-es.org.

- D. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Information is subject to change and is up to date as of the date of the Contract Documents.
 - 1. CPSC - Consumer Product Safety Commission; www.cpsc.gov.
 - 2. EPA - Environmental Protection Agency; www.epa.gov.
 - 3. OSHA - Occupational Safety & Health Administration; www.osha.gov.
 - 4. USDA - Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; www.ars.usda.gov.
 - 5. USDA - Department of Agriculture; Rural Utilities Service; www.usda.gov.
 - 6. USDOJ - Department of Justice; Office of Justice Programs; National Institute of Justice; www.ojp.usdoj.gov.
 - 7. USPS - United States Postal Service; www.usps.com.
- E. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
 - 1. USAB - United States Access Board; www.access-board.gov.
- F. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
 - 1. TAS; Architectural Barriers Texas Accessibility Standards; www.tdlr.texas.gov/ab/abtas.htm.
 - 2. TFS; Texas A&M Forest Service; Sustainable Forestry and Economic Development; www.txforestservation.tamu.edu.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Temporary Utilities:
 - a. Electricity.
 - b. Lighting.
 - c. Communication services.
 - d. Water.
 - e. Sanitary.
 - 2. Construction Facilities:
 - a. Field offices and sheds.
 - b. Vehicular access.
 - c. Parking.
 - d. Progress cleaning.
 - e. Project identification.
 - f. Traffic regulation.
 - 3. Temporary Controls:
 - a. Barriers.
 - b. Fencing.
 - c. Enclosures.
 - d. Security.
 - e. Water control.
 - f. Dust control.
 - g. Erosion and sediment control.
 - h. Noise control.
 - i. Pest and rodent control.
 - j. Pollution control.
 - k. Protection of Work.
 - 4. Removal of utilities, facilities, and controls.
- B. Related Requirements:
 - 1. Other Divisions 01 Specification Sections apply to Work of this Section.
 - 2. Section 01 70 00 "Execution and Closeout Requirements" for final cleaning.

1.2 TEMPORARY ELECTRICITY

- A. Connect to existing power service. Power consumption shall not disrupt Owner's need for continuous service.
- B. Provide temporary electric feeder from electrical service at location as directed. Power consumption shall not disrupt Owner's need for continuous service.

1.3 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

- A. Existing building lighting may be utilized during construction. Owner will maintain lighting and pay cost of energy used. Exercise measures to conserve energy.

1.4 TEMPORARY COMMUNICATION SERVICES

- A. As a minimum, provide cellular mobile telephone service for on-site superintendent and home office telephone service.

1.5 TEMPORARY WATER SERVICE

- A. Connect to existing water source for construction operations. Extend and supplement with temporary devices as needed to maintain specified conditions for construction operations.
- B. Owner will pay cost of water used.
- C. Exercise measures to conserve water.
- D. Provide temporary pipe insulation to prevent freezing.

1.6 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures.
- B. Existing facilities shall not be used.
- C. At end of construction, return facilities to same or better condition than originally found.

1.7 FIELD OFFICES AND SHEDS

- A. Field Office should not be required for Project. If Contractor believes a field office is required, consult with Owner for available location.
- B. Storage Areas and Sheds:
 - 1. Size storage to requirements for products of individual Sections, allowing for access and orderly provision for maintenance and for inspection of products to requirements of Section 01 60 00 "Product Requirements."
 - 2. Fire Extinguishers: Appropriate type fire extinguisher at each storage area.

1.8 EMPLOYEE RESIDENTIAL OCCUPANCY

- A. Not allowed on Owner's property.

1.9 VEHICULAR ACCESS

- A. Location as approved by Architect
- B. Provide unimpeded access for emergency vehicles. Maintain 20-foot-wide driveways with turning space between and around combustible materials.
- C. Provide and maintain access to fire hydrants and control valves free of obstructions.
- D. Provide means of removing mud from vehicle wheels before entering on site paved areas and public streets.
- E. Use existing on-site roads for construction traffic.

1.10 PARKING

- A. Use of designated areas of existing parking facilities by construction personnel is permitted.
- B. Do not allow heavy or tracked vehicles or construction equipment in parking areas.
- C. Permanent Pavements and Parking Facilities:
 - 1. Avoid traffic loading beyond paving design capacity. Tracked vehicles not allowed.

- D. Maintenance:
 - 1. Maintain traffic and parking areas in sound condition free of excavated material, construction equipment, products, mud, snow, and ice.
 - 2. Maintain existing paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original, or specified, condition.
- E. Mud from Site Vehicles: Provide means of removing mud from vehicle wheels before entering streets.

1.11 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Remove waste materials, debris, and rubbish from site and dispose off-site at intervals as required to maintain clean site.

1.12 PROJECT IDENTIFICATION

- A. Project Identification Sign:
 - 1. Size: Provide one 8 ft. wide by 4 ft. high.
 - 2. Materials: 3/4-inch-thick exterior grade plywood and solid wood frame.
 - 3. Background Paint: Exterior quality, 2 coats; sign background of color as selected.
 - 4. Lettering: Exterior paint of quality adequate to withstand weathering, fading, and chipping for duration of construction, contrasting colors as selected with exhibit lettering by professional sign painter.
 - 5. Design: Design indicated in Drawings.
 - 6. Content:
 - a. Project title, as indicated on Contract Documents.
 - b. Owner's name and logo.
 - c. Council members.
 - d. Name of Architect.
 - e. Name of Prime Contractor.
 - 7. Lettering: Series C of Standard Alphabet for Highway Signs, Public Roads Administration, Federal Works Agency.
- B. Project Informational Signs:
 - 1. If required by other Documents or Sections of Project Manual, provide weather-protected signs for site safety procedures, wage rates, and Storm Water Pollution Prevention Plan.
 - 2. Erect sign on or adjacent to field office, if required.
- C. Design sign and structure to withstand 90 miles/hr wind velocity.
- D. Installation:
 - 1. Install Project identification sign within 15 days after date fixed by Notice to Proceed.
 - 2. Erect at location directed by Owner.
 - 3. Erect supports and framing on secure foundation, rigidly braced and framed to resist wind loadings.
 - 4. Install sign surface plumb and level, with butt joints. Anchor securely.
 - 5. Paint exposed surfaces of sign supports and framing.

- E. No other signs are allowed without Owner's permission except those required by law.
- F. Maintenance: Maintain signs and supports clean, repair deterioration and damage.
- G. Removal: Remove signs, framing, supports, and foundations at completion of Project and restore area.

1.13 TRAFFIC REGULATION

- A. Signs, Signals, and Devices:
 - 1. Post Mounted and Wall Mounted Traffic Control and Informational Signs: As approved by authority having jurisdiction.
 - 2. Traffic Control Signals: As approved by local jurisdictions.
 - 3. Traffic Cones and Drums: As approved by authority having jurisdiction.
 - 4. Flares and Lights: As approved by authority having jurisdiction.
 - 5. Flag Person Equipment: As required by authority having jurisdiction.
- B. Flag Persons: Provide trained and equipped flag persons to regulate traffic when construction operations or traffic encroach on public traffic lanes.
- C. Flares and Lights: Use flares and lights during hours of low visibility to delineate traffic lanes and to guide traffic.
- D. Haul Routes:
 - 1. Consult with authority having jurisdiction, establish public thoroughfares to be used for haul routes and site access.
- E. Traffic Signs and Signals:
 - 1. Provide signs at approaches to site and on site, at crossroads, detours, parking areas, and elsewhere as needed to direct construction and affected public traffic.
 - 2. Provide, operate, and maintain traffic control signals to direct and maintain orderly flow of traffic in areas under Contractor's control, and areas affected by Contractor's operations.
 - 3. Relocate as Work progresses, to maintain effective traffic control.
- F. Removal:
 - 1. Remove equipment and devices when no longer required.
 - 2. Repair damage caused by installation.
 - 3. Remove post settings to depth of 2 feet.

1.14 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
 - 1. Allow for Owner's use of site.
- B. Provide barricades and covered walkways required by authorities having jurisdiction for:
 - 1. Public rights-of-way.
 - 2. Public access to existing building.
- C. Provide protection for the following items designated to remain. Replace damaged items condition to original condition.
 - 1. Trees.
 - 2. Shrubbery.
 - 3. Lawns.
- D. Protect site improvements including but not limited to pavements, walkways, and drainage structures from damage. Replace damaged site improvements to original condition.
- E. Protect non-owned vehicular traffic and stored materials from damage.

1.15 TEMPORARY FENCING

- A. Construction: Commercial grade chain link fence.
- B. Provide 6-foot-high fence around construction site and temporary materials storage area; equip with vehicular gates with locks.

1.16 SECURITY

- A. Security Program:
 - 1. Protect Work and existing premises from theft, vandalism, and unauthorized entry.
 - 2. Initiate program at Project mobilization.
 - 3. Maintain program throughout construction period until Owner acceptance precludes need for Contractor security.

1.17 WATER CONTROL

- A. Grade site to drain.
- B. Maintain excavations free of water.
- C. Provide, operate, and maintain pumping equipment.
- D. Protect site from puddling and running water. Provide water barriers as required to protect site from soil erosion.

1.18 DUST CONTROL

- A. Execute Work by methods to minimize raising dust from construction operations.
- B. Provide positive means to prevent air-borne dust from dispersing into atmosphere.

1.19 EROSION AND SEDIMENT CONTROL

- A. Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
- B. Minimize surface area of bare soil exposed at one time.
- C. Provide temporary measures including berms, dikes, and drains, and other devices to prevent water flow that would result in erosion.
- D. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
- E. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.

1.20 NOISE CONTROL

- A. Provide methods, means, and facilities to minimize disruption of Owner's operations and activities due to noise produced by construction operations.
- B. Conduct activities that will produce noise that will or potentially will interfere with Owner's operations and activities at times agreed to by Owner.

1.21 POLLUTION CONTROL

- A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.
- B. Comply with pollution and environmental control requirements of authorities having jurisdiction.

1.22 PROTECTION OF INSTALLED WORK

- A. Protect installed Work and provide special protection where specified in individual Specification Sections.
- B. Provide temporary and removable protection for installed products. Control activity in immediate work area to minimize damage.
- C. Provide protective coverings at openings in walls, roof, and soffits.
- D. Protect finished walkways, drives, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- E. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- F. Prohibit traffic from landscaped areas.

1.23 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary above grade utilities, equipment, facilities, and materials as soon as permanent facilities can be utilized.
- B. Remove risers for underground utilities to a minimum depth of 2 feet and cap.
- C. Remove buried equipment, facilities, and materials completely to a minimum depth of 2 feet and cap.
- D. Backfill excavations as specified in other sections and grade site as indicated.
- E. Clean and repair damage caused by installation or use of temporary work.
- F. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.
- G. Remove the following when no longer needed:
 - 1. Enclosures.
 - 2. Temporary fencing.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 57 23 - TEMPORARY STORMWATER POLLUTION CONTROL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Contractor responsibilities.
 - 2. Submittals.
 - 3. Erosion and sediment controls.
- B. Related Requirements:
 - 1. Local jurisdiction requirements.
 - 2. Division 01 Specification Sections apply to Work of this Section.

1.2 CONTRACTOR RESPONSIBILITIES

- A. Contractor is solely responsible for meeting all TCEQ and EPA requirements for stormwater pollution prevention:
 - 1. Develop a Stormwater Pollution Prevention Plan (SWPPP) if not provided;
 - 2. File Notice of Intent (NOI) and include Owner as an "Operator";
 - 3. Install and maintain all erosion control measures and best management practices (BMPs);
 - 4. Perform inspections and prepare reports; and
 - 5. File Notice of Termination (NOT).

1.3 SUBMITTALS

- A. Submit to Engineer, SWPPP, Submittal Procedures, and all other related documentation conforming to Section 01 33 00 "Submittal Procedures."

1.4 EROSION AND SEDIMENT CONTROLS

- A. Implement structural measures to divert flows from exposed soils, temporarily store flows, or otherwise limit run-off and discharge of pollutants from exposed areas of site. Timely implement structural practices as specified in SWPPP during construction to minimize erosion and sediment run-off.
- B. Stabilized Ingress/Egress:
 - 1. Provide stabilized access to/from construction site as soon as practical per SWPPP.
 - 2. Ensure any soil tracked off-site is cleaned from existing roads, alleys, and any adjacent properties as soon as possible. Check for any pollutants (mud, silt, sand, cement, construction materials, etc.) tracked or washed off-site and perform necessary clean-up measures at the end of each work day.
- C. Silt Fences/Diversion Berms: Provide as a temporary structural practice to minimize erosion and sediment runoff, as necessary. Properly install silt fences and/or diversion berms to effectively retain sediment immediately after completing each phase of work where erosion would occur as sheet and rill erosion (clearing and grubbing, excavation, embankment, grading, etc.).

- D. Sand/Gravel Bags: Provide as a temporary structural practice to minimize erosion and sediment runoff. Properly place bags to effectively retain sediment immediately after completing each phase of work (clearing and grubbing, excavation, embankment, grading, etc.) in each independent runoff area (after clearing and grubbing between ridge and drain, place bags as Work progresses, remove/replace/relocate bags as needed for Work to progress in drainage area). Replace sand/gravel bags no longer in good condition, as needed.
- E. Site Stabilization:
 - 1. Minimize surface area of base soil material at one time.
 - 2. Implement necessary stabilization measures including:
 - a. Temporary/permanent seeding/sodding;
 - b. Inlet protection.
 - 3. Implement stabilization measures per SWPPP.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Products.
 - 2. Product delivery, storage, and handling.
 - 3. Product options.
 - 4. Substitutions.
- B. Related Requirements:
 - 1. Other Division 01 Specification Sections apply to Work of this Section.
 - 2. Section 01 30 00 "Administrative Requirements" for Project information management.
 - 3. Section 01 40 00 "Quality Requirements" for product quality monitoring.
 - 4. Section 01 42 00 "References."

1.2 PRODUCTS

- A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming Work and does not include machinery and equipment used for preparation, fabrication, conveying and erection of Work. When allowed by Contract Documents, products may include used and/or existing materials or components.
- B. Hazardous Materials: Products or material containing hazardous materials or substances, including but not limited to asbestos or polychlorinated biphenylshall (PCB), shall not be included in Work.
- C. Do not use materials and equipment removed from existing premises, except as specifically permitted by Contract Documents.
- D. Provide interchangeable components of same manufacturer, for similar components.
- E. Materials required to match existing work and not otherwise specified, shall be equal to existing work in quality, color, and finish. Workmanship and installation shall be comparable to adjacent existing work. Architect shall be authority in determination of acceptable work.

1.3 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Delivery:
 - 1. Deliver materials, products, and equipment to site in manufacturer's original, unopened containers or packaging, with identifying labels intact and legible.
 - 2. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.
 - 3. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.
 - 4. Arrange deliveries in accord with construction schedule and in ample time to facilitate inspection prior to installation to avoid unnecessary delays in construction process.

- B. Storage:
 - 1. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible.
 - 2. Store sensitive products in weathertight, climate-controlled enclosures.
 - 3. For exterior storage of fabricated products, place on supports, above ground, sloped to drain water.
 - 4. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation or potential degradation of products.
 - 5. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
 - 6. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
 - 7. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.
 - 8. Materials, products, and equipment may be stored off site in a bonded and insured warehouse approved by Architect and Owner. Pay all costs incurred for off-site storage facilities. Products properly stored in off-site storage facilities may be included in progress pay requests with written approval of Architect.
- C. Handling: Handle materials, products, and equipment in a manner prescribed by manufacturer or specified to protect from damage during storage and installation.

1.4 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named in accordance with this Section.

1.5 SUBSTITUTIONS

- A. Architect will consider requests for substitutions within 7 days after date established in Notice to Proceed.
- B. Substitutions (after bidding period) may be considered when a product becomes unavailable through no fault of Contractor.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- D. A request constitutes a representation that Bidder:
 - 1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
 - 2. Will provide same warranty for Substitution as for specified product.
 - 3. Will coordinate installation and make changes to other Work which may be required for Work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension which may subsequently become apparent.
 - 5. Will reimburse Owner and Architect for review or edesign services associated with re-approval by authorities.

- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to Contract Documents.
- F. Substitution Submittal Procedure:
 - 1. Submit request for Substitution for consideration. Limit each request to one proposed Substitution.
 - 2. Requests shall include name of material or equipment to be substituted and a description of proposed substitution including Drawings, performance and test data, and other information necessary for an evaluation.
 - 3. Submit item-by-item (line-by-line) comparison of each item listed in Specification compiled and submitted comparing specified material/product with proposed substitution and specifically noting all differences between the compared products and/or systems.
 - 4. Submit statement setting forth changes in other material, equipment or other portions of Work including changes in work of other contracts that incorporation of proposed substitution would require shall be included.
 - 5. Submit shop drawings, product data, and certified test results for proposed product equivalence.
 - 6. Architect will notify Contractor, in writing, of decision to accept or reject request.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 70 00 - EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Closeout procedures.
 - 2. Final cleaning.
 - 3. Starting of systems.
 - 4. Demonstration and instructions.
 - 5. Testing, adjusting, and balancing.
 - 6. Protecting installed construction.
 - 7. Project record documents.
 - 8. Operation and maintenance data.
 - 9. Manual for materials and finishes.
 - 10. Manual for equipment and systems.
 - 11. Spare parts and maintenance products.
 - 12. Product warranties and product bonds.
 - 13. Maintenance service.
- B. Related Requirements:
 - 1. Other Division 01 Specification Sections apply to Work of this Section.
 - 2. Section 01 30 00 "Administrative Requirements" for Project information management.

1.2 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Architect's review.
- B. Provide submittals to Architect required by authority having jurisdiction.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- D. Closeout documents will be submitted electronically in OCR (Optical Character Recognition)/PDF format.
- E. At Owner's request, Contractor shall provide a hard copy of Closeout Documents in three-ring binders.

1.3 FINAL CLEANING

- A. Execute final cleaning prior to final Project assessment.
- B. Clean equipment and fixtures to sanitary condition with cleaning materials appropriate to surface and material being cleaned.
- C. Clean debris from roofs, gutters, downspouts, and drainage systems.
- D. Clean site; sweep paved areas, rake clean landscaped surfaces.
- E. Remove waste and surplus materials, rubbish, and construction facilities from site.

1.4 STARTING OF SYSTEMS

- A. Coordinate schedule for startup of various equipment and systems.
- B. Notify Owner 7 days prior to startup of each item.
- C. Verify each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.
- D. Verify tests, meter readings, and specified electrical characteristics agree with those required by equipment or system manufacturer.
- E. Verify wiring and support components for equipment are complete and tested.
- F. Execute startup under supervision of applicable manufacturer's representative in accordance with manufacturers' instructions.
- G. When specified in individual Specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to startup, and to supervise placing equipment or system in operation.
- H. Submit a written report in accordance with Section 01 33 00 "Submittal Procedures" that equipment or system has been properly installed and is functioning correctly.

1.5 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of products to Owner's personnel 2 weeks prior to date of Substantial Completion.
- B. For equipment or systems requiring seasonal operation, perform demonstration for other season within 6 months.
- C. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain aspects of operation and maintenance.
- D. Demonstrate startup, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment at agreed time, at equipment location.
- E. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.
- F. Required instruction time for each item of equipment and system is specified in individual Sections.

1.6 TESTING, ADJUSTING, AND BALANCING

- A. Owner will appoint, employ, and pay for services of independent firm to perform testing, adjusting, and balancing.
- B. Reports will be submitted by independent firm to Architect indicating observations and results of tests and indicating compliance or non-compliance with requirements of Contract Documents.

1.7 PROTECTING INSTALLED CONSTRUCTION

- A. Protect installed Work and provide special protection where specified in individual Specification Sections.
- B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- C. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- D. Prohibit traffic from landscaped areas.

1.8 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of record documents; record actual revisions to Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to Contract.
 - 5. Reviewed Shop Drawings, Product Data, and Samples.
 - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress, not less than weekly.
- E. Specifications: Legibly mark and record at each product Section description of products installed, including following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda, Change Orders, RFI responses, and other modifications. For Addenda, Change Orders, and RFI responses, cut out and tape to pages in appropriate location, referencing source of change.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 2. Field changes of dimension and detail.
 - 3. Details not on original Contract Drawings.
 - 4. Changes made by Addenda, Change Order, RFI responses, and other modifications. For Addenda, Change Orders, and RFI responses, cut out and tape to pages in appropriate location, referencing source of change.
 - 5. Submit in OCR (Optical Character Recognition)/PDF format.
 - 6. Internally subdivide contents with page dividers, organized into CSI format shown in Project Manual.
 - 7. Prepare a table of contents, listing each of Division headings and listing each material/product under each heading by manufacturer and material/product name.
 - 8. Submit complete set of aforementioned information in OCR (Optical Character Recognition)/PDF format.
 - 9. Submit information with Application for Final Payment and include MSDS for materials/products delivered or installed in Project.
- G. Submit documents to Architect with claim for final Application for Payment.

1.9 OPERATION AND MAINTENANCE DATA

- A. Submit data electronically in 8-1/2- by 11-inch text pages, OCR (Optical Character Recognition)/PDF format.
- B. Submit documents with Application for Final Payment.

1.10 MANUAL FOR MATERIALS AND FINISHES

- A. Submit in OCR (Optical Character Recognition)/PDF format of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return electronic file with comments.
- B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within 10 days after acceptance.
- C. Submit one electronic copy of completed volumes 15 days prior to final inspection. Draft copy to be reviewed and returned after final inspection, with Architect comments. Revise content of electronic document set as required prior to final submission.
- D. Submit electronic documents of revised final volumes in final form within 10 days after final inspection.
- E. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations.
- F. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- G. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Include recommendations for inspections, maintenance, and repair.
- H. Additional Requirements: As specified in individual product Specification Sections.
- I. Include listing in Table of Contents for design data, with fly sheet.

1.11 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Submit in OCR (Optical Character Recognition)/PDF format of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return with comments.
- B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit electronic documents within 10 days after acceptance.
- C. Submit electronic copy of completed volume(s) 15 days prior to final inspection. Draft copy to be reviewed and returned after final inspection, with Architect comments. Revise content of electronic document set as required prior to final submission.
- D. Submit electronic documents in OCR (Optical Character Recognition)/PDF format of revised final volumes in final form within 10 days after final inspection.
- E. Each Item of Equipment and Each System: Include description of unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and model number of replaceable parts.
- F. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; by label machine.
- G. Include color coded wiring diagrams as installed.
- H. Operating Procedures: Include startup, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shutdown, and emergency instructions. Include summer, winter, and special operating instructions.
- I. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- J. Include servicing and lubrication schedule, and list of lubricants required.
- K. Include manufacturer's printed operation and maintenance instructions.
- L. Include sequence of operation by controls manufacturer.

- M. Include original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- N. Include control diagrams by controls manufacturer as installed.
- O. Include Contractor's coordination drawings, with color coded piping diagrams as installed.
- P. Include charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- Q. Include list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- R. Include test and balancing reports as specified in Section 01 40 00 "Quality Requirements."
- S. Additional Requirements: As specified in individual product Specification Sections.
- T. Include listing in Table of Contents for design data, with dividers.

1.12 SPARE PARTS AND MAINTENANCE PRODUCTS

- A. Furnish spare parts, maintenance, and extra products in quantities specified in individual Specification Sections.
- B. Deliver to Project site and place in location as directed by Owner; obtain receipt prior to final payment.

1.13 PRODUCT WARRANTIES AND PRODUCT BONDS

- A. Obtain warranties and bonds executed by responsible subcontractors, suppliers, and manufacturers, within 10 days after completion of applicable item of work.
- B. Execute and assemble transferable warranty documents and bonds from subcontractors, suppliers, and manufacturers.
- C. Verify documents are in proper form, contain full information, and are notarized.
- D. Co-execute submittals when required.
- E. Include Table of Contents.
- F. Submit one complete set of aforementioned information in OCR (Optical Character Recognition)/PDF format for review.
- G. Submit prior to Application for Final Payment.
- H. Time of Submittals:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing date of acceptance as beginning of warranty or bond period.

1.14 MAINTENANCE SERVICE

- A. Furnish service and maintenance of components indicated in Specification Sections during warranty period.
- B. Examine system components at frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- C. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by manufacturer of original component.
- D. Do not assign or transfer maintenance service to agent or Subcontractor without prior written consent of Owner.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

EXHIBIT A

TECHNICAL SPECIFICATIONS

SECTION 02 41 19 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Demolition and removal of selected site elements.
 - 2. Salvage of existing items to be reused or recycled.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.
 - 2. Section 01 73 00 "Execution" for cutting and patching procedures.
 - 3. Section 31 10 00 "Site Clearing" for site clearing and removal of above- and below-grade improvements.

1.2 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
- C. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.3 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
 - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.4 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site.
 - 1. Inspect and discuss condition of construction to be selectively demolished.
 - 2. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 - 3. Review areas where existing construction is to remain and requires protection.

1.5 INFORMATIONAL SUBMITTALS

- A. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.
- B. Predemolition Photographs or Video: Submit before Work begins.

1.6 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.

1.7 FIELD CONDITIONS

- A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
 - 1. Before selective demolition, Owner will remove the following items:
 - a. **<Insert items to be removed by Owner>**.
- B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- C. Storage or sale of removed items or materials on-site is not permitted.
- D. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review record documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in record documents.
- C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
 - 1. Comply with requirements for existing services/systems interruptions specified in Section 01 10 00 "Summary."

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Comply with requirements for access and protection specified in Section 01 50 00 "Temporary Facilities and Controls."

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 - 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 - 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - 4. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 - 5. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - 6. Dispose of demolished items and materials promptly.
- B. Removed and Reinstalled Items:
 - 1. Clean and repair items to functional condition adequate for intended reuse.
 - 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
 - 3. Protect items from damage during transport and storage.
 - 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned, and reinstalled in their original locations after selective demolition operations are complete.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Concrete: Demolish in sections. Cut concrete full depth at existing joints with construction to remain and at regular intervals using power-driven saw, then remove concrete between saw cuts.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.7 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION

SECTION 31 10 00 - SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Protecting existing vegetation to remain.
 - 2. Clearing and grubbing.
 - 3. Removing above- and below-grade site improvements.
 - 4. Temporary erosion and sedimentation control.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.
 - 2. Section 01 50 00 "Temporary Facilities and Controls" for temporary erosion- and sedimentation-control measures.

1.2 DEFINITIONS

- A. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.
- B. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil," but in disturbed areas such as urban environments, the surface soil can be subsoil.
- C. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction and indicated on Drawings.
- D. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction and indicated on Drawings.
- E. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.4 MATERIAL OWNERSHIP

- A. Except for materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.5 INFORMATIONAL SUBMITTALS

- A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.
 - 1. Use sufficiently detailed photographs or video recordings.

1.6 FIELD CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed trafficways if required by Owner or authorities having jurisdiction.
- B. Salvageable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises.
- C. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.
- D. Do not commence site clearing operations until temporary erosion- and sedimentation-control and plant-protection measures are in place.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 31 20 00 "Earth Moving."
 - 1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.
- B. Antirust Coating: Fast-curing, lead- and chromate-free, self-curing, universal modified-alkyd primer complying with MPI #23 (surface-tolerant, anticorrosive metal primer) or SSPC-Paint 20 or SSPC-Paint 29 zinc-rich coating.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Verify that trees, shrubs, and other vegetation to remain or to be relocated have been flagged and that protection zones have been identified and enclosed according to requirements in Drawings.
- C. Protect existing site improvements to remain from damage during construction.
 - 1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- A. Provide temporary erosion- and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings and requirements of authorities having jurisdiction.
- B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

- C. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
- D. Remove erosion and sedimentation controls, and restore and stabilize areas disturbed during removal.

3.3 TREE AND PLANT PROTECTION

- A. Protect trees and plants remaining on-site according to requirements in Drawings.
- B. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations.

3.4 EXISTING UTILITIES

- A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed.
 - 1. Arrange with utility companies to shut off indicated utilities.
- B. Locate, identify, and disconnect utilities indicated to be abandoned in place.
- C. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others, unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 - 1. Notify Owner not less than two days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Owner's written permission.
- D. Excavate for and remove underground utilities indicated to be removed.

3.5 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.
 - 1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
 - 1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.

3.6 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.
- B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.
 - 1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically.
 - 2. Paint cut ends of steel reinforcement in concrete to remain with two coats of antirust coating, following coating manufacturer's written instructions. Keep paint off surfaces that will remain exposed.

3.7 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

END OF SECTION

SECTION 31 20 00 - EARTH MOVING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Excavating and filling for rough grading the Site.
 - 2. Preparing subgrades for walks turf and grasses.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.
 - 2. Section 31 10 00 "Site Clearing" for site stripping, grubbing, stripping topsoil, and removal of above- and below-grade improvements and utilities.

1.2 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
 - 1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
 - 2. Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- C. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
 - 1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
 - 2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation.
- D. Fill: Soil materials used to raise existing grades.
- E. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 1 cu. yd. for bulk excavation or 3/4 cu. yd. for footing, trench, and pit excavation that cannot be removed by rock-excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering, ripping, or blasting, when permitted:
 - 1. Equipment for Footing, Trench, and Pit Excavation: Late-model, track-mounted hydraulic excavator; equipped with a 42-inch- maximum-width, short-tip-radius rock bucket; rated at not less than 138-hp flywheel power with bucket-curling force of not less than 28,700 lbf and stick-crowd force of not less than 18,400 lbf with extra-long reach boom.
- F. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material 3/4 cu. yd. or more in volume that exceed a standard penetration resistance of 100 blows/2 inches when tested by a geotechnical testing agency, according to ASTM D1586.
- G. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.
- H. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

1.3 FIELD CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth-moving operations.
- C. Do not commence earth-moving operations until temporary site fencing and erosion- and sedimentation-control measures specified in Section 01 50 00 "Temporary Facilities and Controls" and Section 01 57 23 Temporary Stormwater Pollution Control are in place.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D2487, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D2487, or a combination of these groups.
 - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations.
- B. Protect and maintain erosion and sedimentation controls during earth-moving operations.
- C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 DEWATERING

- A. Provide dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of ground water and permit excavation and construction to proceed on dry, stable subgrades.
- B. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

- C. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
 - 1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.
- D. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water and sediment in a manner that avoids inconvenience to others.

3.3 EXPLOSIVES

- A. Explosives: Do not use explosives.
- B. Explosives: Obtain written permission from authorities having jurisdiction before bringing explosives to Project site or using explosives on Project site.
 - 1. Perform blasting without damaging adjacent structures, property, or site improvements.
 - 2. Perform blasting without weakening the bearing capacity of rock subgrade and with the least-practicable disturbance to rock to remain.

3.4 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.
 - 1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
 - 2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:
 - a. 12 inches outside of concrete forms at footings.
 - b. 6 inches outside of minimum required dimensions of concrete cast against grade.
 - c. 6 inches beneath pipe in trenches and the greater of 24 inches wider than pipe or 42 inches wide.

3.5 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.6 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.
 - 1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.
- B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.
 - 1. Clearance: 12 inches each side of pipe or conduit.

- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.
 - 1. For pipes and conduit less than 6 inches in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
 - 2. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.
 - 3. For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.
 - 4. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.
- D. Trench Bottoms: Excavate trenches 4 inches deeper than bottom of pipe and conduit elevations to allow for bedding course. Hand-excavate deeper for bells of pipe.
 - 1. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.
- E. Trenches in Tree- and Plant-Protection Zones:
 - 1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
 - 2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.

3.7 SUBGRADE INSPECTION

- A. Notify Architect when excavations have reached required subgrade.
- B. If Architect determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Compact subgrade below pavements with a Hand Operated Compactor to identify soft pockets and areas of excess yielding. Do not Compact wet or saturated subgrades.
 - 1. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.
- D. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.8 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.9 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
 - 1. Testing and inspecting underground utilities.
 - 2. Removing concrete formwork.
 - 3. Removing trash and debris.
- B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.10 UTILITY TRENCH BACKFILL

- A. Place backfill on subgrades free of mud, frost, snow, or ice.
- B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- C. Trenches under Footings: Backfill trenches excavated under footings and within 18 inches of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings.
- D. Backfill voids with satisfactory soil while removing shoring and bracing.
- E. Initial Backfill:
 - 1. Soil Backfill: Place and compact initial backfill of satisfactory soil, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the pipe or conduit.
 - a. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.
- F. Final Backfill:
 - 1. Soil Backfill: Place and compact final backfill of satisfactory soil to final subgrade elevation.

3.11 SOIL FILL

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations as follows:
 - 1. Under grass and planted areas, use satisfactory soil material.
 - 2. Under walks and pavements, use satisfactory soil material.
- C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.12 SOIL MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
 - 1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
 - 2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.13 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.

- C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D698:
 - 1. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 92 percent.
 - 2. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

3.14 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 - 1. Provide a smooth transition between adjacent existing grades and new grades.
 - 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:
 - 1. Turf or Unpaved Areas: Plus or minus 1/2-inch.
 - 2. Walks: Plus or minus 1/4-inch.

3.15 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:
 - 1. Determine prior to placement of fill that site has been prepared in compliance with requirements.
 - 2. Determine that fill material classification and maximum lift thickness comply with requirements.
 - 3. Determine, during placement and compaction, that in-place density of compacted fill complies with requirements.
- B. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.
- C. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.
- D. Testing agency will test compaction of soils in place according to ASTM D1556, ASTM D2167, ASTM D2937, and ASTM D6938, as applicable. Tests will be performed at the following locations and frequencies:
 - 1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2,000 sq. ft. or less of paved area or building slab but in no case fewer than three tests.
- E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.16 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
 - 1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.17 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.
- B. Transport surplus satisfactory soil to designated storage areas on Owner's property. Stockpile or spread soil as directed by Architect.
 - 1. Remove waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION

SECTION 31 22 16.10 - FINE GRADING FOR ATHLETIC FIELD

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Work in this Section includes furnishing all labor, materials, equipment, and services required to construct, shape, ballfield topsoil (final 6 inches of fill) to the required lines, fine grades, and cross sections as specified herein and on the Plans.
 - 2. Infield Surfacing Material.
 - 3. Contractor will enact erosion control measures as provided for in the Plans.
 - 4. Contractor will replace topsoil that may be lost to erosion or construction processes.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.

1.2 TEST REPORTS

- A. Owner will bear the cost of all testing requirements and will submit test reports from a commercial testing laboratory as specified herein and in the Conditions of the Contract.

1.3 GENERAL IMPORTANCE

- A. Properly placed and finished topsoil and infield material in the ballfield is essential to the success of this Project. Much of the ballfield areas to be planted in turfgrass have minimal surface gradients which must be properly finished to ensure positive surface drainage. Contractor will be required to prove the competence and experience of his workers and subcontractors with respect to their abilities to execute the fine grading required on this Project.

PART 2 - PRODUCTS

2.1 TOPSOIL

- A. Planting-Soil for Turf: Imported, naturally formed soil from off-site sources and consisting of sandy loam soil according to USDA textures; and modified to produce viable planting soil.
 - 1. Sources: Take imported, unamended soil from sources that are naturally well-drained sites where topsoil occurs at least 4 inches deep, not from agricultural land, bogs, or marshes; and that do not contain undesirable organisms; disease-causing plant pathogens; or obnoxious weeds and invasive plants including, but not limited to, quack grass, Johnsongrass, poison ivy, nutsedge, nimble will, Canada thistle, bindweed, bent grass, wild garlic, ground ivy, perennial sorrel, and brome grass.
 - 2. Additional Properties of Imported Soil before Amending: Soil reaction of pH 6 to 7 and minimum of 6 percent organic-matter content, friable, and with sufficient structure to give good tilth and aeration.

3. Unacceptable Properties: Clean soil of the following:
 - a. Unacceptable Materials: Concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials that are harmful to plant growth.
 - b. Unsuitable Materials: Stones, roots, plants, sod, clay lumps, and pockets of coarse sand that exceed a combined maximum of 8 percent by dry weight of the imported soil.

2.2 "BLUE TOP" STAKES

- A. Wooden stakes shall be used to mark final fine grades. Stakes shall be capable of being driven fully into the ground without splitting and without pulverization of their tops. Nominal dimensions of stakes shall be not less than 2-inch x 2-inch x 8-inch long with all four sides beveled into a sharpened bottom point at one end and with a flat top at the other end. After being driven to the proper elevation, each stake top shall be securely fitted with a brightly colored attachment of fibrous plastic strands suitable for promoting visual identification of the driven stake.

2.3 INFIELD SURFACING MATERIAL

- A. Infield surfacing shall be a mixture of the following materials:
 1. Red clay mined from virgin clay pits or banks, screened to a maximum diameter of 1/4-inch.
 2. "Masonry" sand with a particle size as graded within the following limits:

Size	Percent Passing
No. 4	100%
No. 8	95% to 100%
No. 16	70% to 100%
No. 30	40% to 75%
No. 50	10% to 35%
No. 100	2% to 15%
No. 200	0%

3. Infield Conditioner: Turface Athletics – MVP, Red Dog – Red Diamond, or approved equal.
4. "Stabilizer": A non-toxic organic soil binder additive.
5. All soil types must be free of foreign soil, debris, gravel, rock, organic matter, and other objectionable foreign material.
6. Infield surfacing mixtures shall be 70 percent clay and 30 percent sand by volume.
- B. Sample:
 1. Provide a 1-gallon sample of the proposed premixed infield surfacing material submitted for Owner's approval, prior to installation.

2.4 COMPOST

- A. Compost: Well-composted, stable, and weed-free organic matter produced by composting feedstock, and bearing USCC's "Seal of Testing Assurance," and as follows:
 - 1. Feedstock: Limited to leaves.
 - 2. Reaction: pH of 5.5 to 8.
 - 3. Soluble-Salt Concentration: Less than 4 dS/m.
 - 4. Moisture Content: 35-55 percent by weight.
 - 5. Organic Matter Content: 30 to 40 percent of dry weight.
 - 6. Particle Size: Minimum of 98 percent passing through a 2-inch sieve.

2.5 SOIL AMENDMENTS

- A. See Section 32 92 00 "Turf and Grasses."

PART 3 - EXECUTION

3.1 GENERAL

- A. All subgrade preparation shall be accomplished prior to placing topsoil. Placement and fine grading of the ballfield topsoil shall be performed as specified herein, and the completed Work shall conform to the required lines, grades, and cross sections of the Plans. Where topsoil has been lost to erosion or construction operations, it shall be replaced.

3.2 TOPSOIL PLACEMENT AND FINE GRADING

- A. Topsoil placement will not begin until all underground installations are complete, in place, tested to be working properly, and properly backfilled. Topsoil placement will not be attempted until construction which involves heavy vehicles is complete. Such vehicles cause rutting and over compaction.
- B. Onsite topsoil shall first be placed at a depth of 6 inches and shall be graded to within 0.10-foot of finished grade.
- C. Compost shall be spread evenly over the topsoil, then incorporated into the topsoil using a pulvimixer, until they are pulverized creating a homogenous layer of topsoil ready for planting. Apply compost as recommended by soil testing.
- D. The ballfield area should then be tilled to a depth of 6 inches to incorporate the soil amendments and fertilizer into the topsoil.
- E. After tilling, athletic field topsoil shall be compacted to a minimum of 92 percent of Standard Density ASTM D 698 at plus or minus 2 percent of optimum moisture and fine graded to within 0.05-foot of finished grade.
- F. Fine grading shall be executed over all athletic field playing areas by the use of laser guided earthwork equipment.
- G. If topsoil is lost to erosion or construction operations it shall be replaced. If not recoverable on the site, topsoil shall be provided from an off-site source as "imported topsoil."
- H. After fine grading is accomplished, it shall be 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 finished and accepted.

- I. It is anticipated that some areas of topsoil 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.

3.3 INFIELD SURFACING

- A. Fine Grading: Remove top 1-inch of existing skinned infield and fine grade remaining infield material within 1-inch of final grades indicated on Plans. The surface of the surfacing material for the infield after fine grading shall be true to line, grade and cross section. When tested with an 8-foot straight edge it shall have no deviation from the face of the straight edge in excess of 1/4-inch at any point. Any point of the surface not meeting these requirements shall be corrected.
- B. Moisten the fine-graded skinned infield.
- C. New Infield Conditioner Placement: Infield conditioner shall be spread over the existing infield material in a 1-inch layer and "Stabilizer" shall be applied at a rate of 1 pound per 30 square feet. Infield conditioner and "Stabilizer" shall be tilled into the infield surfacing to a depth of 3 inches.
- D. Watering: Water shall be applied over the entire area and allowed to penetrate to a depth of 4 inches or until water is visibly standing on the surfacing material. This is necessary to activate the "Stabilizer." After surface water has disappeared the surfacing shall be compacted.
- E. Compaction: Infield surfacing shall be compacted between 90 percent and 95 percent of Standard AASHTO Density by rolling with a small 1-ton roller. The finished product shall be 8 inches of compacted surfacing, finely graded to the finished contours indicated on the Plans.

3.4 RECORD DRAWING

- A. Upon completion of grading operations and prior to turfgrass planting, Contractor must verify the accuracy of the ballfield grading by having a registered public surveyor shoot grades on a 50-foot grid over the entire ballfield. The grades will then be transferred to a reproducible Drawing of the grading plan and delivered to Architect for approval. No grass planting can begin until the Record Drawing is approved by Architect.

3.5 TESTING

- A. Spot field tests of soil densities shall be required of Contractor by Owner's Representative at Owner's expense at the place and time of Owner's choosing. Any area not meeting density control requirements shall be immediately excavated, reconstructed, and retested, at the expense of Contractor, until satisfactory results are obtained. Up to a total of twenty-five initial tests may be required.

END OF SECTION

SECTION 32 13 13 - CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes Concrete Paving Including the Following:
 - 1. Curbs and gutters.
 - 2. Walks.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.
 - 2. Section 32 13 73 "Concrete Paving Joint Sealants" for joint sealants in expansion and contraction joints within concrete paving and in joints between concrete paving and asphalt paving or adjacent construction.

1.2 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash, slag cement, and other pozzolans.
- B. W/C Ratio: The ratio by weight of water to cementitious materials.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review methods and procedures related to concrete paving, including but not limited to, the following:
 - a. Concrete mixture design.
 - b. Quality control of concrete materials and concrete paving construction practices.
 - 2. Require representatives of each entity directly concerned with concrete paving to attend, including the following:
 - a. Contractor's superintendent.
 - b. Ready-mix concrete manufacturer.
 - c. Concrete paving subcontractor.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified ready-mix concrete manufacturer.
- B. Material Certificates: For the following, from manufacturer:
 - 1. Cementitious materials.
 - 2. Steel reinforcement and reinforcement accessories.
 - 3. Admixtures.
 - 4. Bonding agent or epoxy adhesive.
 - 5. Joint fillers.
- C. Material Test Reports: For each of the following:
 - 1. Aggregates:

1.6 PRECONSTRUCTION TESTING

- A. Preconstruction Testing Service: Engage a qualified independent testing agency to perform preconstruction testing on concrete paving mixtures.

1.7 FIELD CONDITIONS

- A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.
- B. Cold-Weather Concrete Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:
 - 1. When air temperature has fallen to or is expected to fall below 40 degrees F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 degrees F and not more than 80 degrees F at point of placement.
 - 2. Do not use frozen materials or materials containing ice or snow.
 - 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.
- C. Hot-Weather Concrete Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:
 - 1. Cool ingredients before mixing to maintain concrete temperature below 90 degrees F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 - 2. Cover steel reinforcement with water-soaked burlap, so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
 - 3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

- A. ACI Publications: Comply with ACI 301 unless otherwise indicated.

2.2 FORMS

- A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.
 - 1. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less. Do not use notched and bent forms.
- B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

2.3 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615, Grade 60; deformed.
- B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded-wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:
 - 1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.
 - 2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.

2.4 CONCRETE MATERIALS

- A. Cementitious Materials: Use the following cementitious materials, of same type, brand, and source throughout Project:
 - 1. Portland Cement: ASTM C 150, gray portland cement Type I/II.
- B. Normal-Weight Aggregates: ASTM C 33, Class 4M, uniformly graded. Provide aggregates from a single source with documented service-record data of at least 10 years' satisfactory service in similar paving applications and service conditions using similar aggregates and cementitious materials.
 - 1. Maximum Coarse-Aggregate Size: 1-1/2 inches nominal.
 - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Air-Entraining Admixture: ASTM C 260.
- D. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.
 - 1. Water-Reducing Admixture: ASTM C 494, Type A.
 - 2. Retarding Admixture: ASTM C 494, Type B.
 - 3. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.
 - 4. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.
 - 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494, Type G.
 - 6. Plasticizing and Retarding Admixture: ASTM C 1017, Type II.
- E. Water: Potable and complying with ASTM C 94.

2.5 CURING MATERIALS

- A. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry or cotton mats.
- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.
- D. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. BASF Corporation-Construction Systems; MasterKure ER 50 (Pre-2014: Confilm.
 - b. Sika Corporation; SikaFilm.
 - c. W.R. Meadows, Inc; EVAPRE.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. ChemMasters, Inc; Safe-Cure Clear DR.
 - b. Dayton Superior; Clear Resin Cure J11W.
 - c. W.R. Meadows, Inc; 1100-CLEAR SERIES.
- F. White, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 2, Class B, dissipating.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. ChemMasters, Inc; Safe-Cure 2000.
 - b. Dayton Superior; White Resin Cure J10W.
 - c. W.R. Meadows, Inc; 1100-WHITE SERIES.

2.6 RELATED MATERIALS

- A. Joint Fillers: ASTM D 1751, asphalt-saturated cellulosic fiber in preformed strips.
- B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- C. Epoxy-Bonding Adhesive: ASTM C 881, 2-component epoxy resin capable of humid curing and bonding to damp surfaces; of class suitable for application temperature, of grade complying with requirements, and of the following types:
 - 1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.7 CONCRETE MIXTURES

- A. Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete, and as determined by either laboratory trial mixtures or field experience.
 - 1. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.
 - 2. When automatic machine placement is used, determine design mixtures and obtain laboratory test results that comply with or exceed requirements.

- B. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:
 - 1. Air Content: 4-1/2 percent plus or minus 1-1/2 percent for 1-1/2-inch nominal maximum aggregate size.
 - 2. Air Content: 4-1/2 percent plus or minus 1-1/2 percent for 1-inch nominal maximum aggregate size.
 - 3. Air Content: 5 percent plus or minus 1-1/2 percent for 3/4-inch nominal maximum aggregate size.
- C. Limit water-soluble, chloride-ion content in hardened concrete to 0.30 percent by weight of cement.
- D. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.
- E. Concrete Mixtures: Normal-weight concrete.
 - 1. Compressive Strength (28 Days): 4,000 psi .
 - 2. Maximum W/C Ratio at Point of Placement: 0.45.
 - 3. Slump Limit: 5 inches, plus or minus 1 inch.

2.8 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94. Furnish batch certificates for each batch discharged and used in the Work.
 - 1. When air temperature is between 85 and 90 degrees F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 degrees F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.
- B. Compact subbase surface below concrete paving to identify soft pockets and areas of excess yielding.
 - 1. Correct subbase with soft spots and areas of pumping or rutting exceeding depth of 1/2-inch according to requirements in Section 31 20 00 "Earth Moving."
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 STEEL REINFORCEMENT INSTALLATION

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
- C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

3.5 JOINTS

- A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
 - 1. When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.
 - 1. Continue steel reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of paving strips unless otherwise indicated.
 - 2. Butt Joints: Use epoxy-bonding adhesive at joint locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.
 - 1. Locate expansion joints at intervals of 50 feet unless otherwise indicated.
 - 2. Extend joint fillers full width and depth of joint.
 - 3. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
 - 4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
 - 5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
 - 6. During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
- D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows, to match jointing of existing adjacent concrete paving:
 - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a 3/8-inch radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate grooving-tool marks on concrete surfaces.
- E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 3/8-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.6 CONCRETE PLACEMENT

- A. Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast-in.
- B. Remove snow, ice, or frost from subbase surface and steel reinforcement before placing concrete. Do not place concrete on frozen surfaces.
- C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.
- E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.
- F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.
 - 1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement joint devices.
- H. Screed paving surface with a straightedge and strike off.
- I. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleedwater appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

3.7 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.
- B. Float Finish: Begin the second floating operation when bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
 - 1. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface, perpendicular to line of traffic, to provide a uniform, fine-line texture.

3.8 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection.
- C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.
- D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

- E. Curing Methods: Cure concrete by moisture-retaining-cover curing as follows:
 - 1. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears occurring during installation or curing period, using cover material and waterproof tape.

3.9 PAVING TOLERANCES

- A. Comply with tolerances in ACI 117 and as follows:
 - 1. Elevation: 1/4-inch.
 - 2. Thickness: Plus 3/8-inch, minus 1/4-inch.
 - 3. Surface: Gap below 10-feet- long; unleveled straightedge not to exceed 1/2-inch.
 - 4. Joint Spacing: 3 inches.
 - 5. Contraction Joint Depth: Plus 1/4-inch, no minus.
 - 6. Joint Width: Plus 1/8-inch, no minus.

3.10 FIELD QUALITY CONTROL

- A. Testing Services: Testing and inspecting of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
 - 1. Testing Frequency: Obtain at least one composite sample for each 5,000 sq. ft. or fraction thereof of each concrete mixture placed each day.
 - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
 - 2. Slump: ASTM C 143; 1 test at point of placement for each composite sample, but not less than 1 test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
 - 3. Air Content: ASTM C 231, pressure method; 1 test for each composite sample, but not less than 1 test for each day's pour of each concrete mixture.
 - 4. Concrete Temperature: ASTM C 1064; 1 test hourly when air temperature is 40 degrees F and below and when it is 80 degrees F and above, and 1 test for each composite sample.
 - 5. Compression Test Specimens: ASTM C 31; cast and laboratory cure 1 set of 3 standard cylinder specimens for each composite sample.
 - 6. Compressive-Strength Tests: ASTM C 39; test 1 specimen at 7 days and 2 specimens at 28 days.
 - a. A compressive-strength test shall be the average compressive strength from 2 specimens obtained from same composite sample and tested at 28 days.
- B. Strength of each concrete mixture will be satisfactory if average of any 3 consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
- C. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

- D. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
- E. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.
- F. Concrete paving will be considered defective if it does not pass tests and inspections.
- G. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- H. Prepare test and inspection reports.

3.11 REPAIR AND PROTECTION

- A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.
- B. Drill test cores, where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory paving areas with portland cement concrete bonded to paving with epoxy adhesive.
- C. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- D. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION

SECTION 32 13 73 - CONCRETE PAVING JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Cold-applied joint sealants.
 - 2. Primers.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each kind and color of joint sealant required.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backing materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

2.2 COLD-APPLIED JOINT SEALANTS

- A. Single Component, Pourable, Urethane, Elastomeric Joint Sealant: ASTM C 920, Type S, Grade P, Class 25, for Use T (Concrete to Concrete - Horizontal Joint).
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. MasterSeal SL 1.
 - b. Pecora NR-201
- B. Multicomponent, Pourable, Urethane, Elastomeric Joint Sealant: ASTM C 920, Type M, Grade P, Class 25, for Use T (Concrete to Concrete - Vertical Joint).
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Pecora Corporation; Dynatrol II-SG.

2.3 PRIMERS

- A. Primers: Product recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated.

PART 3 - EXECUTION

3.1 INSTALLATION OF JOINT SEALANTS

- A. Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated unless more stringent requirements apply.
- B. Cleaning of Joints: Clean out joints immediately to comply with joint-sealant manufacturer's written instructions.
- C. Joint Priming: Prime joint substrates where indicated or where recommended in writing by joint-sealant manufacturer.
- D. Joint-Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions.
- E. Install joint-sealant backings to support joint sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of joint-sealant backings.
 - 2. Do not stretch, twist, puncture, or tear joint-sealant backings.
 - 3. Remove absorbent joint-sealant backings that have become wet before sealant application and replace them with dry materials.
- F. Install joint sealants immediately following backing installation, using proven techniques that comply with the following:
 - 1. Place joint sealants so they fully contact joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- G. Tooling of Nonsag Joint Sealants: Immediately after joint-sealant application and before skinning or curing begins, tool sealants according to the following requirements to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint:
 - 1. Remove excess joint sealant from surfaces adjacent to joints.
 - 2. Use tooling agents that are approved in writing by joint-sealant manufacturer and that do not discolor sealants or adjacent surfaces.
- H. Provide joint configuration to comply with joint-sealant manufacturer's written instructions unless otherwise indicated.
- I. Clean off excess joint sealant as the Work progresses, by methods and with cleaning materials approved in writing by joint-sealant manufacturers.

END OF SECTION

SECTION 32 17 23.95 - PAVEMENT MARKINGS AND SIGNS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: pavement markings and signs.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.

1.2 SUBMITTALS

- A. Submit complete manufacturer's product data sheets for marking paint.

PART 2 - PRODUCTS

2.1 MATERIAL

- A. Marking Paint: Traffic marking paint F.S. TT-P-115c, Type 11, or THD Specifications WPT-8b white or blue as called for.
- B. Pavement Markings: Pavement marking for striping shall conform to Type I – not applied thermoplastic (DMS-8220) per Item 666 – Reflectorized Pavement Markings, TXDOT Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges, 2014.
- C. Signs: Shall be as specified on the plans and noted below.
 - 1. ADA 'fine' sign as detailed on drawings. Mount sign on existing sign posts.

EQUIPMENT

- D. Equipment shall be pressurized, self-contained paint machine capable of applying a straight line from 2 inches to 6 inches wide, with consistent coverage of a minimum of 200 square feet per gallon.
- E. Provide equipment per Item 666.3, TXDOT Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges, 2014.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Surface preparation for thermoplastic pavement markings shall be in accordance with Item 678, TXDOT Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges, 2014.
- B. Provide a qualified technician to supervise equipment and application of markings. Lay out markings using guide lines, template, and forms.
- C. Thoroughly clean surfaces free of dirt, sand, gravel, oil and other foreign matter prior to application of paint.

3.2 APPLICATION OF PAINT

- A. No striping shall be done until the new pavement has been approved by Architect. All paint shall be applied in accordance with the recommendations of the paint manufacturer.
- B. Surfaces shall be dry. Application shall not be made when weather is foggy or rainy, or ambient or pavement temperatures are below 40 degrees F, nor when such conditions are anticipated during eight hours after application.
- C. Apply marking paint at a rate of one gallon per 200 square feet using a power sprayer. Apply markings straight and even in accordance with approved layout. Stripes shall be 4-inches wide, except where noted otherwise.
- D. Application of thermoplastic pavement markings shall be in accordance with Item 666.4.C.1, TXDOT Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges, 2014.

3.3 CLEANING

- A. Remove any overspray from surfaces other than those requiring marking paint.

3.4 SIGNS

- A. Signs shall be installed as located on the Plans and per manufacturer's directions.

END OF SECTION

SECTION 32 31 13 - CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Chain-link fences.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:
 - a. Fence and gate posts, rails, and fittings.
 - b. Chain-link fabric, reinforcements, and attachments.
- B. Shop Drawings: For each type of fence and gate assembly.
 - 1. Include plans, elevations, sections, details, and attachments to other work.
- C. Samples for Initial Selection: For each type of factory-applied finish.

1.4 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of chain-link fence.
- B. Product Test Reports: For framework strength according to ASTM F 1043, for tests performed by manufacturer and witnessed by a qualified testing agency.
- C. Sample Warranty: For special warranty.

1.5 FIELD CONDITIONS

- A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

1.6 WARRANTY

- A. Special Warranty: Installer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Failure to comply with performance requirements.
 - b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CHAIN-LINK FENCE FABRIC

- A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist according to "CLFMI Product Manual" and requirements indicated below:
 - 1. Fabric Height: 72 inches.
 - 2. Steel Wire for Fabric: Wire diameter of 0.148-inch.
 - a. Mesh Size: 2 inches.
 - b. Zinc-Coated Fabric: ASTM A 392, Type II, Class 2, 2.0 oz./sq. ft. with zinc coating applied after weaving.
 - 3. Selvage: Knuckled at both selvages.

2.2 FENCE FRAMEWORK

- A. Posts and Rails: ASTM F 1043 for framework, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F 1043 based on the following:
 - 1. Fence Height: 72 inches.
 - 2. Heavy-Industrial-Strength Material: Group IA, round steel pipe, Schedule 40.
 - a. Line Post: 4.0 inches in diameter.
 - b. End, Corner, and Pull Posts: 4.0 inches in diameter.
 - 3. Horizontal Framework Members: top and bottom rails according to ASTM F 1043.
 - a. Top Rail: 1.66 inches in diameter.
 - 4. Brace Rails: ASTM F 1043.
 - 5. Metallic Coating for Steel Framework:
 - a. Type A: Not less than minimum 2.0-oz./sq. ft. average zinc coating according to ASTM A 123 or 4.0-oz./sq. ft. zinc coating according to ASTM A 653.

2.3 FITTINGS

- A. Provide fittings according to ASTM F 626.
- B. Post Caps: Provide for each post.
 - 1. Provide line post caps with loop to receive tension wire or top rail.
- C. Rail and Brace Ends: For each gate, corner, pull, and end post.
- D. Rail Fittings: Provide the following:
 - 1. Top Rail Sleeves: Pressed-steel or round-steel tubing not less than 6 inches long.
 - 2. Rail Clamps: Line and corner boulevard clamps for connecting top and bottom rails to posts.
- E. Tension Bars: Steel, length not less than 2 inches shorter than full height of chain-link fabric. Provide 1 bar for each gate and end post, and 2 for each corner and pull post, unless fabric is integrally woven into post.
- F. Tie Wires, Clips, and Fasteners: According to ASTM F 626.
 - 1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, according to the following:
 - a. Hot-Dip Galvanized Steel: 0.148-inch diameter wire; galvanized coating thickness matching coating thickness of chain-link fence fabric.
- G. Finish:
 - 1. Metallic Coating for Pressed Steel or Cast Iron: Not less than 1.2 oz./sq. ft. of zinc.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.
 - 1. Do not begin installation before final grading is completed unless otherwise permitted by Architect.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 CHAIN-LINK FENCE INSTALLATION

- A. Install chain-link fencing according to ASTM F 567 and more stringent requirements specified.
 - 1. Install fencing on established boundary lines inside property line.
- B. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.
- C. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.
 - 1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
 - 2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
 - a. Exposed Concrete: Extend 2 inches above grade; shape and smooth to shed water.
- D. Terminal Posts: Install terminal end, corner, and gate posts according to ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 15 degrees or more. For runs exceeding 500 feet, space pull posts an equal distance between corner or end posts.
- E. Line Posts: Space line posts uniformly at 96 inches o.c.
- F. Post Bracing and Intermediate Rails: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gate posts and at both sides of corner and pull posts.
 - 1. Locate horizontal braces at midheight of fabric 72 inches or higher, on fences with top rail, and at two-third fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.
- G. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.
- H. Bottom Rails: Secure to posts with fittings.

- I. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 1-inch bottom clearance between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.
- J. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts, with tension bands spaced not more than 15 inches o.c.
- K. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric according to ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.
 - 1. Maximum Spacing: Tie fabric to line posts at 12 inches o.c. and to braces at 24 inches o.c.
- L. Fasteners: Install nuts for tension bands and carriage bolts on the side of fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

END OF SECTION

SECTION 32 33 00 - SITE FURNISHINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. The Work to be performed under this Section of the Specification consists of furnishing and installing various miscellaneous park equipment.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.

1.2 SUBMITTALS

- A. Submit Shop Drawings for each product. Indicate details of fabrication, color anchorage, and related construction. Indicate accessories and finishes.

PART 2 - PRODUCTS

2.1 FOUL POLES

- A. Beacon Athletics standard foul pole, 15-foot height.
 - 1. Color: Optic yellow; 800.747.5985.

2.2 EQUIPMENT

- A. Pitching Rubber: Beacon Athletics – Bulldog 3-inch Pitching Rubber, Youth. Install per manufacturer's specifications.
- B. Home Plate: Beacon Athletics: Home Plate with Anchor and Stanchion. Install per manufacturers specifications.
- C. Bases: Beacon Athletics. Pro-Style Base Set. Install per manufacturer's specifications.
- D. Fence Top Protection: All 6-ft. height outfield fencing (excluding backstop) to have Beacon Athletic PlastiCap Fence Topper. Color: Yellow. Installed per manufacturers Specifications.

2.3 SCOREBOARDS

- A. Provide 3 Daktronics Model #BA-2518, 9-ft. L by 4-ft. H scoreboard. Provide 3 Daktronics compatible hardwired control units. Colors to be specified by Architect. Mounting hardware and post colors shall be selected by Owner/Architect. Contact Daktronics: 800.325.8766.
- B. Scoreboards: Contractor shall install scoreboards on concrete foundations and posts as recommended by the manufacturer. Posts shall be primed and painted, color selection by Owner/Architect. Contractor shall provide a foundation design by a professional Engineer who is licensed in the State of Texas. Contractor shall provide the concrete foundation, all grounding as required by manufacturer, and per the electric code and supply conduit and wiring for power and controls.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. All items shall be supplied and installed by Contractor as shown on the Plans and as recommended by the manufacturer.

END OF SECTION

SECTION 32 92 00 - TURF AND GRASSES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Sodding.
 - 2. Turf renovation.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.

1.2 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of planting soil.
- B. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- C. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- D. Planting Soil: Imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See Section 31 22 16.10 "Fine Grading for Athletic Field" for planting soils.
- E. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

1.3 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For landscape Installer.
- B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture, stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
 - 1. Certification of each seed mixture for turfgrass sod. Include identification of source and name and telephone number of supplier.
- C. Product Certificates: For fertilizers, from manufacturer.
- D. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful turf establishment.
 - 1. Experience: Three years' experience in turf installation in addition to requirements in Section 01 40 00 "Quality Requirements."
 - 2. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 - 3. Pesticide Applicator: State licensed, commercial.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.
- B. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" sections in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod within 24 hours of harvesting and in time for planting promptly. Protect sod from breakage and drying.
- C. Bulk Materials:
 - 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
 - 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
 - 3. Accompany each delivery of bulk materials with appropriate certificates.

1.6 FIELD CONDITIONS

- A. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 TURFGRASS SOD

- A. Turfgrass Sod: Number 1 Quality/Premium, including limitations on thatch, weeds, diseases, nematodes, and insects, complying with "Specifications for Turfgrass Sod Materials" in TPI's "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture that is strongly rooted and capable of vigorous growth and development when planted.
- B. Turfgrass Species: Bermudagrass 'Tifway' 419 (*Cynodon dactylon* 'Tifway' 419).

2.2 FERTILIZERS

- A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
 - 1. Composition: 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work.
 - 1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
 - 2. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 - 3. Uniformly moisten excessively dry soil that is not workable or which is dusty.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.2 PREPARATION

- A. Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
 - 1. Protect adjacent and adjoining areas from hydroseeding and hydromulching overspray.
 - 2. Protect grade stakes set by others until directed to remove them.
- B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.3 TURF AREA PREPARATION

- A. General: Prepare planting area for soil placement and mix planting soil according to Section 31 22 16.10 "Fine Grading for Athletic Field."
- B. Placing Planting Soil: Place and mix planting soil in place over exposed subgrade.
 - 1. Reduce elevation of planting soil to allow for soil thickness of sod.
- C. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- D. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 SODDING

- A. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy.

- B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to soil or sod during installation. Tamp and roll lightly to ensure contact with soil, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.
 - 1. Lay sod across slopes exceeding 1:3.
 - 2. Anchor sod on slopes exceeding 1:6 with wood pegs or steel staples spaced as recommended by sod manufacturer but not less than two anchors per sod strip to prevent slippage.
- C. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches below sod.

3.5 TURF RENOVATION

- A. Renovate existing turf where indicated.
- B. Renovate turf damaged by Contractor's operations, such as storage of materials or equipment and movement of vehicles.
 - 1. Reestablish turf where settlement or washouts occur or where minor regrading is required.
 - 2. Install new planting soil as required.
- C. Remove sod and vegetation from diseased or unsatisfactory turf areas; do not bury in soil.
- D. Remove topsoil containing foreign materials, such as oil drippings, fuel spills, stones, gravel, and other construction materials resulting from Contractor's operations, and replace with new planting soil.
- E. Mow, dethatch, core aerate, and rake existing turf.
- F. Remove weeds before seeding. Where weeds are extensive, apply selective herbicides as required. Do not use pre-emergence herbicides.
- G. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and turf, and legally dispose of them off Owner's property.
- H. Till stripped, bare, and compacted areas thoroughly to a soil depth of 6 inches.
- I. Apply soil amendments and initial fertilizer required for establishing new turf and mix thoroughly into top 4 inches of existing soil. Install new planting soil to fill low spots and meet finish grades.
 - 1. Initial Fertilizer: Commercial fertilizer applied according to manufacturer's recommendations.
- J. Apply sod as required for new turf.
- K. Water newly planted areas and keep moist until new turf is established.

3.6 TURF MAINTENANCE

- A. General: Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.
 - 1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
 - 2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
 - 3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.

- B. Watering: Modify existing irrigation system as required to provide full coverage of new sod. Keep turf uniformly moist to a depth of 4 inches.
 - 1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
 - 2. Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.
- C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more than one-third of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:
 - 1. Mow bermudagrass to a height of 1/2- to 1 inch.
- D. Turf Postfertilization: Apply commercial fertilizer after initial mowing and when grass is dry.
 - 1. Use fertilizer that provides actual nitrogen of at least 1 lb/1,000 sq. ft. to turf area.

3.7 SATISFACTORY TURF

- A. Turf installations shall meet the following criteria as determined by Architect:
 - 1. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.
- B. Use specified materials to reestablish turf that does not comply with requirements, and continue maintenance until turf is satisfactory.

3.8 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.
- C. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.
- D. Remove nondegradable erosion-control measures after grass establishment period.

3.9 MAINTENANCE SERVICE

- A. Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in "Turf Maintenance" Article. Begin maintenance immediately after each area is planted and continue until acceptable turf is established, but for not less than the following periods:
 - 1. Sodded Turf: 30 days from date of Substantial Completion.

END OF SECTION

EXHIBIT B

PLANS