

Issued For Bid

Midwestern State University

New Residence Hall
Site Improvements – BP01
3410 Taft Blvd.
Wichita Falls, TX 76308

Site Improvements – BP 02 Volume I of I

Date: June 10, 2016

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JUNE 2016

NEW RESIDENCE HALL
SITE IMPROVEMENTS - BP02
MIDWESTERN STATE UNIVERSITY

PROFESSIONAL CERTIFICATIONS

PART 1 - ARCHITECTURAL

PART 2 - I hereby certify that the documents intended to be authenticated by my seal are limited to: Specification Sections in Division 01, Divisions 02 through 14, and Drawing Sheet G001. The various parts to which their individual responsibilities apply are limited those identified above their seal.


JOHN W. PETRELLI - TX Architectural License No.: 5552



14 JUN 16

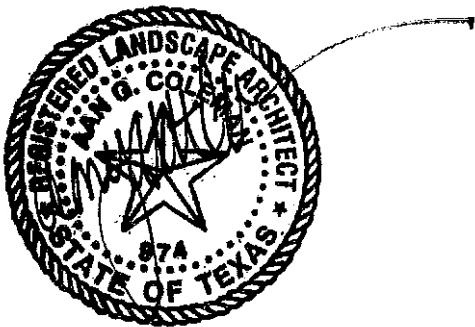
DOCUMENT 00 01 05.09 – LANDSCAPE ARCHITECT CERTIFICATION PAGE

1.01 DESIGN PROFESSIONALS OF RECORD

A. Landscape Architect:

1. Aan G. Coleman under contract as a consultant to the Architect
2. Texas License Number 974
3. Responsible for Drawings with "L and IR" prefix.
4. Responsible for the following Division 32 Sections of the Specifications:

..... 01-56-36, 32-92-00, 32-93-00,



END OF DOCUMENT 00 01 05.09

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	DAVIS BACON WAGE DETERMINATION

DIVISION 01 – GENERAL REQUIREMENTS

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DIVISION 02 - EXISTING CONDITIONS

NOT APPLICABLE

DIVISION 03 - CONCRETE

NOT APPLICABLE

DIVISION 04 - MASONRY

NOT APPLICABLE

DIVISION 05 - METALS

NOT APPLICABLE

DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES

NOT APPLICABLE

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

NOT APPLICABLE

DIVISION 08 - OPENINGS

NOT APPLICABLE

DIVISION 09 – FINISHES

NOT APPLICABLE

DIVISION 10 - SPECIALTIES

NOT APPLICABLE

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NOT APPLICABLE

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NOT APPLICABLE

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NOT APPLICABLE

DIVISION 14 - CONVEYING EQUIPMENT

NOT APPLICABLE

DIVISION 21 - FIRE SUPPRESSION

NOT APPLICABLE

DIVISION 22 - PLUMBING

NOT APPLICABLE

DIVISION 23 - HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)

NOT APPLICABLE

DIVISION 26 - ELECTRICAL

NOT APPLICABLE

DIVISION 27 - COMMUNICATIONS

NOT APPLICABLE

DIVISION 28 - ELECTRONIC SAFETY AND SECURITY

NOT APPLICABLE

DIVISION 31 - EARTHWORK

NOT APPLICABLE

DIVISION 32 - EXTERIOR IMPROVEMENTS

32 9200 TURF AND GRASSES

32 9300 PLANTS

DIVISION 33 - UTILITIES

NOT APPLICABLE

JUNE 2016

NEW RESIDENCE HALL
SITE IMPROVEMENTS – BP02
MIDWESTERN STATE UNIVERSITY

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2005 Uniform General Conditions

The background of the page features a large, faint, circular seal of the State of Texas. The seal contains a five-pointed star in the center, surrounded by a wreath. The words "THE STATE OF TEXAS" are inscribed around the perimeter of the seal.

Uniform General Conditions for Construction Contracts

August 17, 2005

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Uniform General Conditions

2005 Edition Uniform General Conditions

Article 1. Definitions

Unless the context clearly requires another meaning, the following terms have the meaning assigned herein.

- 1.1 *Architect/Engineer (A/E)* means a person registered as an architect pursuant to Tex. Occ. Code Ann., Chapter 1051, as a landscape architect pursuant to Tex. Occ. Code Ann., Chapter 1052, a person licensed as a professional engineer pursuant Tex. Occ. Code Ann., Chapter 1001 and/or a firm employed by Owner or Design-Build Contractor to provide professional architectural or engineering services and to exercise overall responsibility for the design of a Project or a significant portion thereof, and to perform the contract administration responsibilities set forth in the Contract.
- 1.2 *Change Order* means a written modification of the Contract between the Owner and Contractor, signed by the Owner, the Contractor and the Architect/Engineer.
- 1.3 *Change Order Proposal* means a Contractor-generated document in response to a Change Order Request (COR).
- 1.4 *Change Order Request (COR)* means a document which informs the contractor of a proposed change in the Work, and appropriately describes or otherwise documents such change.
- 1.5 *Close-out documents* means the product brochures, product/equipment maintenance and operations instructions, manuals, and other documents/warranties, as-built record documents, affidavit of payment, release of lien and claim, and as may be further defined, identified, and required by the Contract Documents.
- 1.6 *Contract* means the entire agreement between the Owner and the Contractor, including all of the Contract Documents.
- 1.7 *Contract Date* is the date when the agreement between the owner and the contractor becomes effective.
- 1.8 *Contract Documents* means those documents identified as a component of the agreement (contract) between the owner and the contractor. These may include, but are not limited to, Drawings, Specifications, General, Supplementary and Special Conditions, and all pre-bid and/or pre-proposal addenda.
- 1.9 *Contractor* means the individual, corporation, company, partnership, firm or other entity contracted to perform the Work, regardless of the type of construction contract used, so that the term as used herein includes a Construction Manager-at-Risk or a Design-Build firm as well as a

Uniform General Conditions

General or Prime Contractor. The contract documents refer to *Contractor* as if singular in number.

- 1.10 *Contract Sum* means the total compensation payable to the Contractor for completion of the Work in accordance with the terms of the contract.
- 1.11 *Contract Time* means the period between the Start Date identified in the Notice to Proceed with Construction and the Substantial Completion date identified in the Notice to Proceed or as subsequently amended by Change Order.
- 1.12 *Date of Commencement* means the date designated in the Notice to Proceed for the Contractor to commence the Work.
- 1.13 *Day* means a calendar day, unless otherwise specifically stipulated.
- 1.14 *Drawings* means that product of the Architect/Engineer which graphically depicts the Work.
- 1.15 *Final Completion* means the date determined and certified by the Architect/Engineer and Owner on which the Work is fully and satisfactorily complete in accordance with the Contract.
- 1.16 *Owner* means the State of Texas and any Agency of the State of Texas, acting through the responsible entity of the State of Texas identified in the Contract as the Owner.
- 1.17 *Owner's Designated Representative (ODR)* means the individual assigned by the Owner to act on its behalf, and to undertake certain activities as specifically outlined in the Contract. The ODR is the only party authorized to direct changes to the scope, cost, or time of the contract.
- 1.18 *Project* means all activities necessary for realization of the Work. This includes design, contract award(s), execution of the Work itself, and fulfillment of all contract and warranty obligations.
- 1.19 *Samples* means representative physical examples of materials, equipment or workmanship, used to confirm compliance with requirements and/or to establish standards for use in execution of the Work.
- 1.20 *Schedule of Values* means the detailed breakdown of the cost of the materials, labor and equipment necessary to accomplish the Work as described in the Contract Documents, submitted by Contractor for approval by Owner and Architect/Engineer.
- 1.21 *Shop Drawings* means the drawings, diagrams, illustrations, schedules, performance charts, brochures and other data prepared by the Contractor or its agents, which detail a portion of the Work.
- 1.22 *Site* means the geographical area of the location of the Work.
- 1.23 *Special Conditions* means the documents containing terms and conditions, which may be unique to the project. Special Conditions are a

Uniform General Conditions

part of the Contract Documents and have precedence over the Uniform General Conditions.

- 1.24 *Specifications* means the written product of the Architect/Engineer that establishes the quality and/or performance of products utilized in the Work and processes to be used, including testing and verification for producing the Work.
- 1.25 *Subcontractor* means a business entity that enters into an agreement with the Contractor to perform part of the Work or to provide services, materials or equipment for use in the Work.
- 1.26 *Substantial Completion* means the date determined and certified by the Contractor, Architect/Engineer and Owner when the Work or a designated portion thereof is sufficiently complete, in accordance with the Contract, so as to be operational and fit for the use intended.
- 1.27 *Supplementary General Conditions* means procedures and requirements that modify the Uniform General Conditions. Supplementary General Conditions, when used, have precedence over the Uniform General Conditions.
- 1.28 *Unit Price Work* means Work or a portion of the Work paid for based on incremental units of measurement.
- 1.29 *Unilateral Change Order (ULCO)* means a Change Order issued by the Owner without the agreement of the Contractor.
- 1.30 *Work* means the administration, procurement, materials, equipment, construction and all services necessary for the Contractor, and/or its agents, to fulfill the Contractor's obligations under the Contract.

Article 2. Laws Governing Construction

- 2.1. Environmental Regulations. The Contractor shall conduct activities in compliance with applicable laws and regulations and other requirements of the Contract relating to the environment, and its protection at all times. Unless otherwise specifically determined, the Owner is responsible for obtaining and maintaining permits related to stormwater run-off. The Contractor shall conduct operations consistent with stormwater run-off permit conditions. Contractor is responsible for all items it brings to site, including hazardous materials, and all such items brought to the site by its subcontractors and suppliers, or by other entities subject to direction of the Contractor. The Contractor shall not incorporate hazardous materials into the Work without prior approval of Owner, and shall provide an affidavit attesting to such in association with request for Substantial Completion inspection..
- 2.2. Wage Rates. The Contractor shall not pay less than the wage scale of the various classes of labor as shown on the "Prevailing Wage Schedule" provided by the Owner. The specified wage rates are minimum rates only. The Owner is not bound to pay any claims for additional compensation made by any Contractor because the Contractor pays wages in excess of the applicable minimum rate contained in the Contract. The "Prevailing Wage Schedule" is not a representation that qualified labor adequate to perform the Work is available locally at the prevailing wage rates.
- 2.2.1 Notification to Workers. The Contractor shall notify each worker, in writing, of the following as they commence work on the contract: the worker's job classification, the established minimum wage rate requirement for that classification, as well as the worker's actual wage. The notice must be delivered to and signed in acknowledgement of receipt by the employee and must list both the wages and fringe benefits to be paid or furnished for each classification in which the worker is assigned duties. When requested by the Owner, the Contractor shall furnish evidence of compliance with the Texas Prevailing Wage Law.
- 2.2.1.1 Submit a copy of each worker wage-rate notification to the ODR with the application for progress payment for the period during which the worker was engaged in activities on behalf of the project.
- 2.2.1.2 The "Prevailing Wage Schedule" is determined by the Owner in compliance with Tex. Gov't Code, Chapter 2258. Should the Contractor at any time become aware that a particular skill or trade not reflected on the Owner's Prevailing Wage Schedule will be or is being employed in the Work, whether by the Contractor or by a subcontractor, the Contractor shall promptly inform the ODR of the proposed wage to be paid for the skill along with a justification for same. The Contractor is responsible for determining the most appropriate wage for a particular skill in relation to similar skills or trades identified on the Prevailing Wage

Schedule. In no case shall any worker be paid less than the wage indicated for Laborers.

2.2.1.3 Penalty for Violation. The Contractor and any Subcontractor will pay to the State a penalty of sixty dollars (\$60) for each worker employed for each calendar day, or portion thereof, that the worker is paid less than the wage rates stipulated in the Prevailing Wage Schedule.

2.2.1.4 Complaints of Violations

2.2.1.4.1 Owner's Determination of Good Cause. Upon receipt of information concerning a violation of Tex. Gov't Code, Chapter 2258, the Owner will, within 31 days, make an initial determination as to whether good cause exists that a violation occurred. The Owner will send documentation of the initial determination to the Contractor against whom the violation was alleged, and to the worker involved. Upon making a good-cause finding, the Owner will retain the full amounts claimed by the claimant or claimants as the difference between wages paid and wages due under the Prevailing Wage Schedule and any supplements thereto, together with the applicable penalties, such amounts being subtracted from successive progress payments pending a final decision on the violation.

2.2.1.4.2 If the Contractor and claimant worker reach an agreement concerning the claim, the contractor shall promptly notify the Owner in a written document countersigned by the worker.

2.2.1.4.3 Arbitration Required. If the violation is not resolved within 14 days following initial determination by the Owner, the Contractor and the claimant worker must participate in binding arbitration in accordance with the Texas General Arbitration Act, Tex. Civ. Prac. & Rev. Code, Chapter 171. For a period not to exceed 10 days, after which, if no agreement reached, a district court may be petitioned by any of the parties to the arbitration to appoint an arbitrator whose decision will be binding on all parties.

2.2.1.4.4 Arbitration Award. If an arbitrator assesses an award against the Contractor, the Contractor shall promptly furnish a copy of said award to the Owner. The Owner may use any amounts retained under Article 2.2.1.4.1 to pay the worker the amount as designated in the arbitration award. If the retained funds are insufficient to pay the worker in accordance with the arbitration award, the worker has a right of action against the Contractor, and/or the surety to receive the amount owed, plus attorneys' fees and court costs. The Owner has no duty to release any funds to either the claimant or the Contractor until

it has received the notices of agreement or the arbitration award.

2.2.1.4.5 No Extension of Time. If the Owner's determination proves valid that good cause existed to believe a violation had occurred, the Contractor is not entitled to an extension of time for any delay arising directly or indirectly from of the arbitration procedures set forth herein.

2.3. Venue for Suits. The venue for any suit arising from this contract will be in a court of competent jurisdiction in Travis County, Texas, or as may otherwise designated in the Supplementary General Conditions.

2.4. Licensing of Trades. The Contractor shall comply with all applicable provisions of state law related to license requirements for skilled tradesmen, contractors, suppliers and or laborers, as necessary to accomplish the Work. In the event the Contractor, or one of its Subcontractors, loses its license during the term of performance of the Contract, the Contractor shall promptly hire or contract with a licensed provider of the service at no additional cost to the Owner.

2.5. Royalties, Patents & Copyrights. The Contractor shall pay all royalties and license fees, defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof.

2.6. State Sales and Use Taxes. The Owner qualifies for exemption from certain State and Local Sales and Use Taxes pursuant to the provisions of Tex. Tax Code, Chapter 151. The Contractor may claim exemption from payment of applicable State taxes by complying with such procedures as prescribed by the State Comptroller of Public Accounts.

Article 3. General Responsibilities of Owner & Contractor

- 3.1. Owner's General Responsibilities. The Owner is the entity identified as such in the Contract and referred to throughout the Contract Documents as if singular in number.
 - 3.1.1 Preconstruction Conference. Prior to, or concurrent with, the issuance of Notice to Proceed with Construction, a conference will be convened for attendance by the Owner, Contractor, Architect/Engineer (AE) and appropriate Subcontractors. The purpose of the conference is to establish a working understanding among the parties as to the Work, the operational conditions at the project site, and general administration of the Project. Topics include communications, schedules, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, maintaining required records and all other matters of importance to the administration of the Project and effective communications between the project team members.
 - 3.1.2 Owner's Designated Representative. Prior to the start of construction, Owner will identify the Owner's Designated Representative (ODR), who has the express authority to act and bind the Owner to the extent and for the purposes described in the various Articles of the Contract, including responsibilities for general administration of the Contract.
 - 3.1.2.1 Unless otherwise specifically defined elsewhere in the contract documents, the ODR is the single point of contact between the Owner and Contractor. Notice to the ODR, unless otherwise noted, constitutes notice to the Owner under the Contract.
 - 3.1.2.2 All directives on behalf of the Owner will be conveyed to the Contractor by the ODR in writing.
 - 3.1.3 Owner Supplied Materials and Information.
 - 3.1.3.1 The Owner will furnish to the Contractor those surveys describing the physical characteristics, legal description, limitations of the site, site utility locations, and other information used in the preparation of the Contract Documents.
 - 3.1.3.2 The Owner will provide information, equipment, or services under the Owner's control to the Contractor with reasonable promptness.
 - 3.1.4 Availability of Lands. The Owner will furnish, as indicated in the Contract, all required rights to use the lands upon which the Work occurs. This includes rights-of-way and easements for access and

such other lands that are designated for use by the Contractor. The Contractor shall comply with all Owner identified encumbrances or restrictions specifically related to use of lands so furnished. The Owner will obtain and pay for easements for permanent structures or permanent changes in existing facilities, unless otherwise required in the Contract Documents.

3.1.5 Limitation on Owner's Duties

3.1.5.1 The Owner will not supervise, direct, control or have authority over or be responsible for Contractor's means, methods, technologies, sequences or procedures of construction or the safety precautions and programs incident thereto. The Owner is not responsible for any failure of Contractor to comply with laws and regulations applicable to the Work. The Owner is not responsible for the failure of Contractor to perform or furnish the Work in accordance with the Contract Documents. Owner are not responsible for the acts or omissions of Contractor, or any of its subcontractors, suppliers or of any other person or organization performing or furnishing any of the Work on behalf of the Contractor.

3.1.5.2 The Owner will not take any action in contravention of a design decision made by the AE in preparation of the Contract Documents, when such actions are in conflict with statutes under which the AE is licensed for the protection of the public health and safety.

3.2 Role of Architect/Engineer. Unless specified otherwise in the Contract between the Owner and the Contractor, the AE shall provide general administration services for the Owner during the construction phase of the project. Written correspondence, requests for information, and shop drawings/submittals shall be directed to the AE for action. The AE has the authority to act on behalf of the Owner to the extent provided in the Contract Documents, unless otherwise modified by written instrument, which will be furnished to the Contractor by the ODR, upon request.

3.2.1 Site Visits

3.2.1.1 The AE will make visits to the site at intervals as provided in the AE's contract agreement with the Owner, to observe the progress and the quality of the various aspects of Contractor's executed Work and report findings to the Owner.

3.2.1.2 The AE has the authority to interpret Contract Documents and inspect the Work for compliance and conformance with the Contract. Except as referenced in Article 3.1.5.2, the Owner retains the sole authority to accept or reject Work and issue direction for correction, removal, or replacement of Work.

3.2.2 Clarifications and Interpretations. It may be determined that clarifications or interpretations of the Contract Documents are

necessary. Upon direction by the ODR such clarifications or interpretations will be provided by the AE consistent with the intent of the Contract Documents. The AE will issue these clarifications with reasonable promptness to the Contractor as Architect's Supplemental Instruction (ASI) or similar instrument. If Contractor believes that such clarification or interpretation justifies an adjustment in the Contract Sum or the Contract Time, the Contractor shall so notify the Owner in accordance with the provisions of Article 11.

3.2.3 Limitations on Architect/Engineer Authority. The AE is not responsible for:

- 3.2.3.1 The Contractor's means, methods, techniques, sequences, procedures, safety, or programs incident to the Project nor will the AE supervise, direct, control or have authority over the same.
- 3.2.3.2 The Failure of Contractor to comply with laws and regulations applicable to the furnishing or performing the Work.
- 3.2.3.3 The Contractor's failure to perform or furnish the Work in accordance with the Contract Documents.
- 3.2.3.4 Acts or omissions of the Contractor, or of any other person or organization performing or furnishing any of the Work.

3.3 Contractor's General Responsibilities. The Contractor is solely responsible for implementing the Work in full compliance with all applicable laws and the contract documents and shall supervise and direct the Work using the best skill and attention to assure that each element of the Work conforms to the Contract requirements. The Contractor is solely responsible for all construction means, methods, techniques, safety, sequences, coordination and procedures.

- 3.3.1 Project Administration. The Contractor shall provide project administration for all subcontractors, vendors, suppliers, and others involved in implementing the Work and shall coordinate administration efforts with those of the AE and ODR in accordance with these General Conditions and provisions of Division 1 Specifications, and as outlined in the Pre-construction Conference.
- 3.3.2 Contractor's Superintendent. Employ a competent resident superintendent who will be present at the Project Site during the progress of the Work. The superintendent is subject to the approval of the ODR. Do not change approved superintendents during the course of the project without the written approval of the ODR unless the superintendent leaves the employ of the Contractor.
- 3.3.3 Labor. Provide competent, suitably qualified personnel to survey, lay-out, and construct the Work as required by the Contract Documents. Maintain good discipline and order at the Site at all times.

- 3.3.4 Services, Materials, and Equipment. Unless otherwise specified, provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities, incidentals, and services necessary for the construction, performance, testing, start-up, inspection and completion of the Work.
- 3.3.5 Non-Compliant Work. Should the AE and/or the ODR identify Work as non-compliant with the Contract Documents, the ODR will communicate the finding to the Contractor and the Contractor will correct such Work at its expense. The approval of Work by either the AE or ODR does not relieve the Contractor from the obligation to comply with all requirements of the Contract Documents.
- 3.3.6 Subcontractors. Do not employ any Subcontractor, supplier or other person or organization, whether initially or as a substitute, against whom the Owner may have reasonable objection. The Owner will communicate such objections in writing. The Contractor is not required to employ any Subcontractor, supplier or other person or organization to furnish any of the work to whom the Contractor has reasonable objection. The Contractor will not substitute Subcontractors without the acceptance of the Owner.
- 3.3.6.1 All Subcontracts and supply contracts shall be consistent with and bound to the terms and conditions of the Contract Documents including provisions of the Agreement between the Contractor and the Owner.
- 3.3.6.2 The Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with the Contractor. Require all Subcontractors, suppliers and such other persons and organizations performing or furnishing any of the Work to communicate with Owner only through the Contractor. Furnish to the Owner a copy of each first-tier subcontract promptly after its execution. The Contractor agrees that the Owner has no obligation to review or approve the content of such contracts and that providing the Owner such copies in no way relieves the Contractor of any of the terms and conditions of the Contract, including, without limitation, any provisions of the Contract which require the subcontractor to be bound to the Contractor in the same manner in which the Contractor is bound to the Owner.
- 3.3.7 Continuing the Work. Carry on the Work and adhere to the progress schedule during all disputes, disagreements or alternative resolution processes with the Owner. Do not delay or postpone any Work

because of the pending resolution of any disputes, disagreements or processes, except as the Owner and the Contractor may agree in writing.

- 3.3.8 Cleaning. At all times, keep the Site and the Work clean and free from accumulation of waste materials or rubbish caused by the construction activities under the Contract. The Contractor shall ensure that the entire Project is thoroughly cleaned prior to requesting Substantial Completion Inspection and, again, upon completion of the Project prior to the final inspection.
- 3.3.9 Acts and Omissions of Contractor, its Subcontractors and Employees. The Contractor is responsible for acts and omissions of his employees and all its subcontractors, their agents and employees. The Owner may, in writing, require the Contractor to remove from the Project any of Contractor's or its subcontractor's employees that the ODR finds to be careless, incompetent, or otherwise objectionable.
- 3.3.10 Indemnification of Owner. The Contractor covenants and agrees to FULLY INDEMNIFY and HOLD HARMLESS, the Owner and the elected officials, employees, officers, directors, volunteers, and representatives of the Owner, individually or collectively, from and against any and all costs, claims, liens, damages, losses, expenses, fees, fines, penalties, proceedings, actions, demands, causes of action, liability and suits of any kind and nature, including but not limited to, personal or bodily injury, death and property damage, made upon the Owner directly or indirectly arising out of, resulting from or related to Contractor's activities under this Contract, including any acts or omissions of Contractor, any agent, officer, director, representative, employee, consultant or the Subcontractor of Contractor, and their respective officers, agents, employees, directors and representatives while in the exercise of performance of the rights or duties under this Contract. The indemnity provided for in this paragraph does not apply to any liability resulting from the negligence of the Owner, officers or employees, separate Contractors or assigned contractors, in instances where such negligence causes personal injury, death or property damage. IN THE EVENT CONTRACTOR AND OWNER ARE FOUND JOINTLY LIABLE BY A COURT OF COMPETENT JURISDICTION, LIABILITY WILL BE APPORTIONED COMPARATIVELY IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, WITHOUT WAIVING ANY GOVERNMENTAL IMMUNITY AVAILABLE TO THE STATE UNDER TEXAS LAW AND WITHOUT WAIVING ANY DEFENSES OF THE PARTIES UNDER TEXAS LAW.
- 3.3.10.1 The provisions of this Indemnification are solely for the benefit of the parties hereto and not intended to create or grant any rights, contractual or otherwise, to any other person or entity.

- 3.3.10.2 Promptly advise the Owner in writing of any claim or demand against the Owner or the Contractor known to the Contractor related to or arising out of the Contractor's activities under this Contract.
- 3.3.11 Ancillary Areas. Operate and maintain operations and associated storage areas at the site of the Work in accordance with the following:
 - 3.3.11.1 Confine all Contractor operations, including storage of materials and employee parking upon the Site of Work, to areas designated by the Owner.
 - 3.3.11.2 The Contractor may erect, at its own expense, temporary buildings that will remain its property. Remove such buildings and associated utility service lines upon completion of the Work, unless the Contractor requests and the Owner provides written consent that it may abandon such buildings and utilities in place.
 - 3.3.11.3 Use only established roadways or construct and use such temporary roadways as may be authorized by the Owner. Do not allow load limits of vehicles to exceed the limits prescribed by appropriate regulations or law. Provide protection to road surfaces, curbs, sidewalks, trees, shrubbery, sprinkler systems, drainage structures and other like existing improvements to prevent damage and repair any damage thereto at the expense of the Contractor.
 - 3.3.11.4 The Owner may restrict the Contractor's entry to the site to specifically assigned entrances and routes.
- 3.3.12 Separate Contracts. Additional Contractor responsibilities when the Owner awards separate Contracts
 - 3.3.12.1 The Owner reserves the right to award other contracts in connection with other portions of the Project under these or similar contract conditions.
 - 3.3.12.2 The Owner reserves the right to perform operations related to the Project with the Owner's own forces.
 - 3.3.12.3 Under a system of separate contracts, the conditions described herein continue to apply except as may be amended by change order.

Article 4. Historically Underutilized Business (HUB) Subcontracting Plan

- 4.1. General Description. The purpose of the Historically Underutilized Business (HUB) Program is to promote equal business opportunities for economically disadvantaged persons (as defined by Tex. Gov't Code, Chapter 2161) to contract with the State of Texas in accordance with the goals specified in the State of Texas Disparity Study. The HUB Program annual procurement utilization goals per 1 Texas Administrative Code (TAC) §111.13 are: 11.9 percent for heavy construction other than building contracts, 26.1 percent for all building construction, including general contractors and operative builders contracts, 57.2 percent for all special trade construction contracts, 20 percent for professional services contracts, 33 percent for all other services contracts and 12.6 percent for commodities contracts.
 - 4.1.1 State agencies are required by statute to make a good faith effort to assist HUBs in participating in contract awards issued by the State. 1 TAC §111.11-111.28, outline the state's policy to encourage outreach to and potential utilization of HUBs in state contracting opportunities through race, ethnic and gender neutral means.
 - 4.1.2 A Contractor who contracts with the State in an amount of \$100,000 is required to make a good faith effort to award subcontracts to HUBs in accordance with 1 TAC §111.14 by submitting a HUB Subcontracting Plan at the time of bidding and complying with the HUB Subcontracting Plan after it is accepted by the Owner and during the term of the contract.
- 4.2. Compliance with Approved HUB Subcontracting Plan. Contractor, having been awarded this Contract in part by complying with the HUB Program statute and rules, hereby covenants to continue to comply with the HUB Program as follows:
 - 4.2.1 Prior to substituting a Subcontractor, promptly notify the Owner in the event a change is required for any reason to the accepted HUB Subcontracting Plan.
 - 4.2.2 Conduct the good faith effort activities required and provide the Owner with necessary documentation to justify approval of a change to the approved HUB Subcontracting Plan.
 - 4.2.3 Cooperate in the execution of a Change Order or such other approval of the change in the HUB Subcontracting Plans as the Contractor and Owner may agree to.
 - 4.2.4 Maintain and make available to Owner upon request business records documenting compliance with the accepted HUB Subcontracting Plan.
 - 4.2.5 Upon receipt of payment for performance of Work, submit to Owner a compliance report, in the format required by the Owner that demonstrates Contractor's performance of the HUB Subcontracting Plan.

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- 4.2.6 Promptly and accurately explain and provide supplemental information to Owner to assist in the Owner's investigation of the Contractor's good faith effort to fulfill the HUB Subcontracting Plan and the requirements under 1 TAC §111.14.
- 4.3. Failure to Demonstrate Good Faith Effort. Upon a determination by Owner that Contractor has failed to demonstrate a good faith effort to fulfill the HUB Subcontracting Plan or any contract covenant detailed above, the Owner may, in addition to all other remedies available to it, report the failure to perform to the Texas Building and Procurement Commission Vendor Performance and may bar the Contractor from future contracting opportunities with the Owner.

Article 5. Bonds & Insurance

5.1. Construction Bonds.

The Contractor is required to tender to Owner, prior to commencing the Work, performance and payment bonds, as required by Tex. Gov't Code, Chapter 2253.

- 5.1.1. A Performance Bond is required if the Contract Price is in excess of \$100,000. The Performance Bond is solely for the protection of the Owner. The Performance Bond is to be for the Contract Sum to guarantee the faithful performance of the Work in accordance with the Contract Documents. The form of the bond shall be approved by the Attorney General of Texas. The Performance Bond shall be effective through the Contractor's warranty period.
- 5.1.2. A Payment Bond is required if the Contract Price is in excess of \$25,000. The payment bond is to be for the Contract Sum and is payable to the Owner solely for the protection and use of payment bond beneficiaries who have a direct contractual relationship with the Contractor or a Subcontractor. The form of the bond shall be approved by the Attorney General of Texas.
- 5.1.3. Bond Requirements. Each bond shall be executed by a corporate surety or sureties authorized to do business in the State of Texas and acceptable to the Owner, on the Owner's form, and in compliance with the relevant provisions of the Texas Insurance Code. If any bond is for more than 10 percent of the surety's capital and surplus, the Owner may require certification that the company has reinsured the excess portion with one or more reinsurers authorized to do business in the State. A reinsurer may not reinsure for more than 10 percent of its capital and surplus. If a surety upon a bond loses its authority to do business in the State, the Contractor shall, within thirty (30) days after such loss, furnish a replacement bond at no added cost to the Owner.
- 5.1.4. Power of Attorney. Each bond shall be accompanied by a valid Power-of-Attorney (issued by the surety company and attached, signed and sealed with the corporate embossed seal, to the bond) authorizing the attorney in fact who signs the bond to commit the company to the terms of the bond, and stating any limit in the amount for which the attorney can issue a single bond.
- 5.1.5. Bond Indemnification. The process of requiring and accepting bonds and making claims thereunder shall be conducted in compliance with Tex. Gov't Code, Chapter 2253. IF FOR ANY REASON A STATUTORY PAYMENT OR PERFORMANCE BOND IS NOT HONORED BY THE SURETY, THE CONTRACTOR SHALL FULLY INDEMNIFY AND HOLD THE OWNER HARMLESS OF AND FROM ANY COSTS, LOSSES, OBLIGATIONS OR LIABILITIES IT INCURS AS A RESULT.

- 5.1.6. Furnishing Bond Information. Owner shall furnish certified copies of the payment bond and the related Contract to any qualified person seeking copies who complies with Tex. Gov't Code, §2253.026.
- 5.1.7. Claims on Payment Bonds. Claims on payment bonds must be sent directly to the Contractor and his surety in accordance with Tex. Gov't Code § 2253.041. All Payment Bond claimants are cautioned that no lien exists on the funds unpaid to the Contractor on such Contract, and that reliance on notices sent to the Owner may result in loss of their rights against the Contractor and/or his surety. The Owner is not responsible in any manner to a claimant for collection of unpaid bills, and accepts no such responsibility because of any representation by any agent or employee.
- 5.1.8. Payment Claims when Payment Bond not Required. The rights of Subcontractors regarding payment are governed by Tex. Prop. Code, §§53.231 – 53.239 when the value of the Contract between the Owner and the Contractor is less than \$25,000.00. These provisions set out the requirements for filing a valid lien on funds unpaid to the Contractor as of the time of filing the claim, actions necessary to release the lien and satisfaction of such claim.
- 5.1.9 Sureties shall be listed on the US Department of the Treasury's Listing Approved Sureties stating companies holding Certificates of Authority as acceptable sureties on Federal Bonds and acceptable reinsuring companies (Department Circular 570).

5.2. Insurance Requirements.

The Contractor shall carry insurance in the types and amounts indicated in this Article for the duration of the Contract. The required insurance shall include coverage for Owner's property in the care, custody and control of Contractor prior to construction, during construction and during the warranty period. The insurance shall be evidenced by delivery to the Owner of certificates of insurance executed by the insurer or its authorized agent stating coverages, limits, expiration dates and compliance with all applicable required provisions. Upon request, the Owner, and/or its agents, shall be entitled to receive without expense, copies of the policies and all endorsements. The Contractor shall update all expired policies prior to submission for monthly payment. Failure to update policies shall be reason for withholding of payment until renewal is provided to the Owner.

- 5.2.1. The Contractor shall provide and maintain the insurance coverage with the minimum amounts described below until the end of the warranty period unless otherwise stated in Supplementary General Conditions. Failure to maintain insurance coverage, as required, is grounds for Suspension of Work for Cause pursuant to Article 14. The Contractor will be notified of the date on which the Builder's Risk insurance policy may be terminated through Substantial Completion Notices, Acceptance Notices and/or other means as deemed appropriate by the Owner.

- 5.2.2. Coverage shall be written on an occurrence basis by companies authorized and admitted to do business in the State of Texas and rated A- or better by A.M. Best Company or otherwise acceptable to Owner.

5.2.2.1. Insurance coverage required includes:

- 5.2.2.1.1. Workers' Compensation. Insurance with limits as required by the Texas Workers' Compensation Act, with the policy endorsed to provide a waiver of subrogation as to the Owner, Employer's Liability insurance of not less than:

\$100,000 each accident

\$100,000 disease each employee

\$500,000 disease policy limit

- 5.2.2.1.2. Commercial General Liability Insurance. Including Independent Contractor's liability, Products and Completed Operations and Contractual Liability, covering, but not limited to, the liability assumed under the indemnification provisions of this contract, fully insuring Contractor's (or Subcontractors) liability for bodily injury and property damage with a combined bodily injury (including death) and property damage minimum limit of :

\$1,000,000 per occurrence

\$1,000,000 general aggregate

\$1,000,000 products and completed operations aggregate

Coverage shall be on an "occurrence" basis.

The policy shall include coverage extended to apply to completed operations and explosion, collapse, underground hazards. The policy shall include endorsement CG2503 Amendment-Aggregate Limits of Insurance (Per Project) or its equivalent.

- 5.2.2.1.3. Asbestos Abatement Liability Insurance, including coverage for liability arising from the encapsulation, removal, handling, storage, transportation, and disposal of asbestos containing materials. *This requirement applies if the Work or the Project includes asbestos containing materials.

The Combined single limit for bodily injury and property damage will be a minimum of \$1,000,000 per occurrence.

*Specific Requirement for Claims-Made Form: Required period of coverage will be determined by the following formula: Continuous coverage for life of the contract, plus one (1) year (to provide coverage for the warranty period),

and an extended discovery period for a minimum of five (5) years which shall begin at the end of the warranty period.

If this contract is for asbestos abatement only, the All-Risk Builder's Risk or All-Risk Installation Floater (e) is not required.

- 5.2.2.1.4. Comprehensive Automobile Liability Insurance, covering owned, hired, and non-owned vehicles, with a combined bodily injury (including death) and property damage minimum limit of \$1,000,000 per occurrence. No aggregate shall be permitted for this type of coverage.

Such insurance is to include coverage for loading and unloading hazards.

- 5.2.2.1.5. All Risk Builder's Risk Insurance (or All Risk Installation Floater for instances in which the project involves solely the installation of equipment). Coverage shall be All-Risk, including, but not limited to, Fire, Extended Coverage, Vandalism and Malicious Mischief, Flood, Earthquake, Theft and damage resulting from faulty workmanship, design or materials. If Builder's Risk, limit shall be equal to 100 percent of the contract. If Installation Floater, limit shall be equal to 100 percent of the contract cost. The policy shall be written jointly in the names of the Owner, the Contractor, Subcontractors and, Subcontractors shall be named as additional insured. The policy shall have endorsements as follows:

5.2.2.1.5.1. This insurance shall be specific as to coverage and not contributing insurance with any permanent insurance maintained on the property.

5.2.2.1.5.2. This insurance shall not contain an occupancy clause suspending or reducing coverage should the Owner occupy, or begin beneficial occupancy before the Owner has accepted final completion.

5.2.2.1.5.3. Loss, if any, shall be adjusted with and made payable to the Owner as Trustee for the insureds as their interests may appear; the right of subrogation under the Builder's Risk policy shall be waived as to the Owner. The Owner shall be named as Loss Payee. For renovation projects or projects that involve portions of work contained within an existing structure, refer to Special Conditions for possible additional Builder's Risk insurance requirements.

- 5.2.2.1.6. "Umbrella" Liability Insurance. The Contractor shall obtain, pay for and maintain umbrella liability insurance during the contract term, insuring the Contractor (or Subcontractor) for

an amount of not less than amount specified in the Supplementary General Conditions or Special Conditions that provides coverage at least as broad as and applies in excess and follows form of the primary liability coverages required hereinabove. The policy shall provide "drop down" coverage where underlying primary insurance coverage limits are insufficient or exhausted.

If this contract is for asbestos abatement only, the "Umbrella" Excess Liability is not required

5.2.3. Policies must include the following clauses, as applicable:

5.2.3.1. This insurance shall not be canceled, materially changed, or non-renewed until after thirty (30) days prior written notice has been given to the Owner.

5.2.3.2. It is agreed that the Contractor's insurance shall be deemed primary with respect to any insurance or self insurance carried by the Owner for liability arising out of operations under the Contract with the Owner.

5.2.3.3. The Owner, its officials, directors, employees, representatives, and volunteers are added as additional insureds as respects operations and activities of, or on behalf of the named insured performed under contract with the Owner. The additional insured status must cover completed operations as well. This is not applicable to the workers' compensation policy.

5.2.3.4. The workers' compensation and employers' liability policy will provide a waiver of subrogation in favor of the Owner.

5.2.4. Without limiting any of the other obligations or liabilities of the Contractor, the Contractor shall require each Subcontractor performing work under the Contract, at the Subcontractor's own expense, to maintain during the term of the Contract, the same stipulated minimum insurance including the required provisions and additional policy conditions as shown above. As an alternative, the Contractor may include its Subcontractors as additional insureds on its own coverage as prescribed under these requirements. The Contractor's certificate of insurance shall note in such event that the Subcontractors are included as additional insureds and that Contractor agrees to provide Workers' Compensation for the Subcontractors and their employees. The Contractor shall obtain and monitor the certificates of insurance from each Subcontractor in order to assure compliance with the insurance requirements. The Contractor must retain the certificates of insurance for the duration of the Contract plus 5 years and shall have the responsibility of enforcing these insurance requirements among its subcontractors. The Owner shall be entitled, upon request and without expense, to receive copies of these certificates.

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- 5.2.5. Workers' Compensation Insurance Coverage must meet the statutory requirements of the Tex. Lab. Code, §401.011(44) and specific to construction projects for public entities as required by Tex. Lab. Code, §406.096.

Article 6. Contract Documents

6.1. Drawings and Specifications

- 6.1.1 Copies Furnished. The Contractor will be furnished, free of charge, the number of complete sets of the Drawings and Specifications as provided in the Supplementary General Conditions or Special Conditions. Additional complete sets of Drawings and Specifications, if requested, will be furnished at reproduction cost to the one requesting such additional sets.
- 6.1.2 Ownership of Drawings and Specifications. All Drawings, Specifications and copies thereof furnished by the AE are to remain A/E's property. These documents are not to be used on any other project, and with the exception of one Contract set for each party to the Contract, are to be returned to the Architect/Engineer, upon request, following completion of the Work.
- 6.1.3 Interrelation of Documents. The Contract Documents as referenced in the Agreement between the Owner and the Contractor are complimentary, and what is required by one shall be as binding as if required by all.
- 6.1.4 Resolution of Conflicts in Documents. Where conflicts may exist between and/or within the Contract Documents, the higher quality, greater quantity, more restrictive, and/or more expensive requirement shall be the basis of Contractor pricing, and the Contractor shall notify the AE and the ODR for resolution of the issue prior to executing the work in question.
- 6.1.5 Contractor's Duty to Review Contract Documents. In order to facilitate its responsibilities for completion of the Work in accordance with and as reasonably inferable from the Contract Documents, prior to pricing or commencing the Work, the Contractor shall examine and compare the Contract Documents, information furnished by the Owner, relevant field measurements made by the Contractor and any visible or reasonably anticipated conditions at the site affecting the Work. This duty extends throughout the construction phase prior to commencing each particular work activity and/or system installation.
- 6.1.6 Discrepancies and Omissions in Drawings and Specifications
 - 6.1.6.1 Promptly report to the ODR and to the AE the discovery of any apparent error, omission or inconsistency in the Contract Documents prior to execution of the Work.
 - 6.1.6.2 It is recognized that the Contractor is not acting in the capacity of a licensed design professional, unless it is performing as a Design-Build firm.
 - 6.1.6.3 It is further recognized that the Contractor's examination of contract documents is to facilitate construction and does not create an

affirmative responsibility to detect errors, omissions or inconsistencies or to ascertain compliance with applicable laws, building codes or regulations, unless it is performing as a Design-Build firm or a Construction Manager-at-Risk.

- 6.1.6.4 When performing as a Design-Build firm, the Contractor has sole responsibility for discrepancies, errors, and omissions in the drawings and specifications.
- 6.1.6.5 When performing as a Construction Manager-at-Risk, the Contractor has a shared responsibility for discovery and resolution of discrepancies, errors, and omissions in the Contract Documents. In such case, the Contractor's responsibility pertains to review, coordination, and recommendation of resolution strategies within budget constraints, but does not establish a liability for design.
- 6.1.6.6 The Contractor has no liability for errors, omissions, or inconsistencies unless the Contractor knowingly failed to report a recognized problem to the Owner or the Work is executed under a Design-Build or Construction Manager-at-Risk contract as outlined above. Should the Contractor fail to perform the examination and reporting obligations of these provisions, the Contractor is responsible for avoidable costs, direct, and/or consequential damages.

6.2 Requirements for Record Documents

Maintain at the Site one copy of all Drawings, Specifications, addenda, approved Submittals, Contract modifications, and all Project correspondence. Keep current and maintain Drawings and Specifications in good order with postings and markings to record actual conditions of Work and show and reference all changes made during construction. Provide Owner and AE access to these documents.

- 6.2.1 Maintain this record set of Drawings and Specifications which reflect the "As Constructed" conditions and representations of the Work performed, whether it be directed by addendum, Change Order or otherwise. Make available all records prescribed herein for reference and examination by the Owner and its representatives and agents.
- 6.2.2 Update the "As-Constructed" Drawings and Specifications monthly prior to submission of periodic partial pay estimates. Failure to maintain such records constitutes cause for denial of a progress payment otherwise due.
- 6.2.3 Prior to requesting Substantial Completion Inspection by the ODR and AE, furnish a complete set of the marked up "As-Constructed" set maintained at the site and one photocopy of same. Concurrently with furnishing these record drawings, furnish a preliminary copy of each operating and maintenance manual (O&M) required by the Contract Documents, for review by the AE and the ODR.

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- 6.2.4 Once determined acceptable, provide mylar prints of professionally drafted "As-Constructed" drawings, along with electronic copy on CD, "As-Constructed" specifications in bound volume(s) along with electronic copy on CD, two sets of photocopies or prints of the mylar "As-Constructed" drawings, two sets of operating and maintenance manuals, two sets of approved submittals, and other record documents as required elsewhere in the Contract Documents.

Article 7. Safety

- 7.1. General. It is the duty and responsibility of the Contractor and all of its Subcontractors to be familiar with, enforce and comply with all requirements of Public Law 91-596, 29 U.S.C. §§651 et. seq., the Occupational Safety and Health Act of 1970, (OSHA) and all amendments thereto. The Contractor shall prepare a Safety Plan specific to the Project and submit it to the ODR and AE prior to commencing Work. In addition, the Contractor and all of its Subcontractors shall comply with all applicable laws and regulations of any public body having jurisdiction for safety of persons or property to protect them from damage, injury or loss and erect and maintain all necessary safeguards for such safety and protection.
- 7.2. Notices. The Contractor shall provide notices as follows:
- 7.2.1 Notify owners of adjacent property including those that own or operate utility services and/or underground facilities, and utility owners, when prosecution of the Work may affect them or their facilities, and cooperate with them in the protection, removal, relocation and replacement, and access to their facilities and/or utilities.
 - 7.2.2 Coordinate the exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the site in connection with laws and regulations. Maintain a complete file of MSDS for all materials in use on site throughout the construction phase and make such file available to the Owner and its agents as requested.
- 7.3. Emergencies. In any emergency affecting the safety of persons or property, the Contractor shall act to minimize, mitigate, and prevent threatened damage, injury or loss.
- 7.3.1 Have authorized agents of Contractor respond immediately upon call at anytime of day or night when circumstances warrant the presence of Contractor to protect the Work or adjacent property from damage or to take such action pertaining to the Work as may be necessary to provide for the safety of the public.
 - 7.3.2 Give the ODR and AE prompt notice of all such events.
 - 7.3.3 If Contractor believes that any changes in the Work or variations from Contract Documents have been caused by its emergency response, promptly notify the Owner within 72 hours of the emergency response event.
 - 7.3.4 Should Contractor fail to respond, Owner is authorized to direct other forces to take action as necessary and Owner may deduct any cost of remedial action from funds otherwise due the Contractor.
- 7.4. Injuries. In the event of an incident or accident involving outside medical care for an individual on or near the Work, Contractor shall notify the ODR

and other parties as may be directed within twenty-four (24) hours of the event.

- 7.4.1 Record the location of the event and the circumstances surrounding it, by using photography or other means, and gather witness statements and other documentation which describes the event.
- 7.4.2 Supply the ODR and AE with an incident report no later than 36 hours after the occurrence of the event. In the event of a catastrophic incident (one fatality or three workers hospitalized), barricade and leave intact the scene of the incident until all investigations are complete. A full set of incident investigation documents, including facts, finding of cause, and remedial plans shall be provided within one week after occurrence, unless otherwise directed by legal counsel. Contractor shall provide the ODR with written notification within one week of such catastrophic event if legal counsel delays submission of full report.
- 7.5. Environmental Safety. Upon encountering any previously unknown potentially hazardous material, or other materials potentially contaminated by hazardous material, Contractor shall immediately stop work activities impacted by the discovery, secure the affected area, and notify the ODR immediately.
 - 7.5.1 Bind all Subcontractors to the same duty.
 - 7.5.2 Upon receiving such notice, the ODR will promptly engage qualified experts to make such investigations and conduct such tests as may be reasonably necessary to determine the existence or extent of any environmental hazard. Upon completion of this investigation, the ODR will issue a written report to the Contractor identifying the material(s) found and indicate any necessary steps to be taken to treat, handle, transport or dispose of the material.
 - 7.5.3 The Owner may hire third-party contractors to perform any or all such steps.
 - 7.5.4 Should compliance with the ODR's instructions result in an increase in the Contractor's cost of performance, or delay the Work, the Owner will make an equitable adjustment to the Contract price and/or the time of completion, and modify the Contract in writing accordingly.
- 7.6. Trenching Plan. When the project requires excavation which either exceeds a depth of four feet, or results in any worker's upper body being positioned below grade level, the Contractor is required to submit a trenching plan to the ODR prior to commencing trenching operations. The plan is required to be prepared and sealed by a professional engineer registered in the State of Texas, and employed by the Contractor. Said engineer cannot be anyone who is otherwise either directly or indirectly engaged on this project

Article 8. Quality Control

8.1. Materials & Workmanship. The Contractor shall execute Work in a good and workmanlike manner in accordance with the Contract Documents. The Contractor shall develop and provide a Quality Control Plan specific to this project and acceptable to the Owner. Where Contract Documents do not specify quality standards, complete and construct all Work in compliance with generally accepted construction industry standards. Unless otherwise specified, incorporate all new materials and equipment into the Work under the Contract.

8.2. Testing

8.2.1 Contractor Testing. The Contractor is responsible for coordinating and paying for all routine and special tests required to confirm compliance with quality and performance requirement of the Contract Documents. This “quality control” testing shall include any particular testing required by the Specifications and the following general tests.

8.2.1.1. Any test of basic material or fabricated equipment included as part of a submittal for a required item in order to establish compliance with the Contract Documents.

8.2.1.2 Any test of basic material or fabricated equipment offered as a substitute for a specified item on which a test may be required in order to establish compliance with the Contract Documents.

8.2.1.3 Routine, preliminary, start-up, pre-functional and operational testing of building equipment and systems as necessary to confirm operational compliance with requirements of the Contract Documents.

8.2.1.4 All subsequent tests on original or replaced materials conducted as a result of prior testing failure.

8.2.2 Owner Testing. The Owner reserves the right to subject materials and systems incorporated into the Project to routine tests as may be specified or as deemed necessary by the ODR or the AE to insure compliance with the quality and/or performance requirements of the Contract Documents and/or with laws, ordinances, rules, regulations and/or orders of any public authority having jurisdiction. The results of such “quality assurance” testing will be provided to the Contractor and, to the extent provided, the Contractor may rely on findings.

8.2.3 All testing shall be performed in accordance with standard test procedures by an accredited laboratory, or special consultant as appropriate, acceptable to the Owner. Results of all tests shall be provided promptly to the ODR, Architect/Engineer and the Contractor.

8.2.4 Non-Compliance (Test Results). Should any of the tests indicate that a material and/or system does not comply with the contract requirements, the burden of proof remains with the Contractor, subject to:

- 8.2.4.1 Contractor selection and submission of the laboratory for Owner acceptance.
- 8.2.4.2 Acceptance by the Owner of the quality and nature of tests.
- 8.2.4.3 All tests taken in the presence of the Architect/Engineer and/or ODR, or their representatives.
- 8.2.4.4 If tests confirm that the material/systems comply with Contract Documents, the Owner will pay the cost of the test.
- 8.2.4.5 If tests reveal noncompliance, the Contractor will pay those laboratory fees and costs of that particular test and all future tests, of that failing Work, necessary to eventually confirm compliance with Contract Documents.
- 8.2.4.6 Proof of noncompliance with the Contract Documents will make the Contractor liable for any corrective action which the ODR determines appropriate, including complete removal and replacement of non-compliant work or material.
- 8.2.5 Notice of Testing. The Contractor shall give the ODR and the AE timely notice of its readiness and the date arranged so the ODR and AE may observe such inspection, testing or approval.
- 8.2.6 Test Samples. The Contractor is responsible for providing samples of sufficient size for test purposes and for coordinating such tests with their Work Progress Schedule to avoid delay.
- 8.2.7 Covering Up Work - If the Contractor covers up any Work without providing the Owner an opportunity to inspect, the Contractor shall, if requested by ODR, uncover and recover the work at Contractor's expense.

8.3 Submittals

- 8.3.1 Contractor's Submittals. Submit with reasonable promptness consistent with the Project Schedule and in orderly sequence all Shop Drawings, Samples, or other information required by the Contract Documents, or subsequently required by Change Order. Prior to submitting, the Contractor shall review each submittal for compliance with Contract Documents and certify by approval stamp affixed to each copy. Submittal data presented without the Contractor's certification will be returned without review or comment, and any delay resulting from such certification is the Contractor's responsibility.
 - 8.3.1.1 Within twenty-one (21) calendar days of the effective date of the Notice To Proceed with construction, submit to the ODR, and the AE, a submittal schedule/register, organized by specification section, listing all items to be furnished for review and approval by the Architect/Engineer and Owner. The list shall include shop drawings, manufacturer's literature, certificates of compliance,

materials samples, materials colors, guarantees, and all other items identified throughout the specifications.

- 8.3.1.2 Indicate the type of item, contract requirements reference, and Contractor's scheduled dates for submitting the item along with the requested dates for approval answers from the Architect/Engineer and Owner. The submittal register shall indicate the projected dates for procurement of all included items and shall be updated at least monthly with actual approval and procurement dates. Show and allow a minimum of thirty (30) calendar days duration after receipt by the Architect/Engineer and ODR for review and approval. If re-submittal required, allow a minimum of an additional fifteen (15) calendar days for review. Submit the updated submittal register with each request for progress payment. The Owner may establish routine review procedures and schedules for submittals at the preconstruction conference and/or elsewhere in the Contract Documents.
- 8.3.1.3 Coordinate the submittal register with the Work Progress Schedule. Do not schedule Work requiring a submittal to begin prior to scheduling review and approval of the related submittal. Revise and/or update both schedules monthly to ensure consistency and current project data. Provide to the ODR the updated submittal register and schedule with each application for progress payment. Refer to requirements for the Work Progress Schedule for inclusion of procurement activities therein. Regardless, the submittal register shall identify dates submitted and returned and shall be used to confirm status and disposition of particular items submitted, including approval or other action taken and other information not conveniently tracked through the Work Progress Schedule.
- 8.3.1.4 By submitting Shop Drawings, Samples or other required information, the Contractor represents and certifies that they have determined and verified all applicable field measurements, field construction criteria, materials, catalog numbers and similar data; and has checked and coordinated each Shop Drawing and Sample with the requirements of the Work and the Contract Documents.
- 8.3.2 Review of Submittals. AE and ODR review is only for conformance with the design concept and the information provided in the Contract Documents. Responses to submittals will be in writing. The approval of a separate item does not indicate approval of an assembly in which the item functions. The approval of a submittal does not relieve the Contractor of responsibility for any deviation from the requirements of the Contract unless the Contractor informs the AE and ODR of such deviation in a clear, conspicuous, and written manner on the submittal transmittal and at the time of submission, and obtains the Owner's written specific approval of the particular deviation. -

- 8.3.3 Correction and Resubmission. Make any corrections required to a submittal and resubmit the required number of corrected copies promptly so as to avoid delay, until submittal approval. Direct attention in writing to the AE and the ODR, when applicable, to any new revisions other than the corrections requested on previous submissions.
- 8.3.4 Limits on Shop Drawing Approvals. The Contractor shall not commence any Work requiring a submittal until approval of the submittal. Construct all such work in accordance with approved submittals. Approval of Shop Drawings and Samples is not authorization to Contractor to perform extra work or changed work unless authorized through a Change Order. The AE's and ODR's approval, if any, does not relieve Contractor from responsibility for defects in the Work resulting from errors or omissions of any kind on the submittal, regardless of any approval action.
- 8.3.5 No Substitutions Without Approval. The ODR and the AE may receive and consider the Contractor's request for substitution when the Contractor agrees to reimburse the Owner for review costs and satisfies 8.3.5.1, 8.3.5.2, and 8.3.5.3 in combination with one or more of the items in 8.3.5.4 through 8.3.5.11 of the following conditions, as determined by the Owner. If the Contractor does not satisfy these conditions, the ODR and AE will return the request without action except to record noncompliance with these requirements. The Owner will not consider the request if the Contractor cannot provide the product or method because of failure to pursue the Work promptly or coordinate activities properly.
- 8.3.5.1 The Contract Documents do not require extensive revisions.
 - 8.3.5.2 Proposed changes are in keeping with the general intent of the Contract Documents and the design intent of the AE and do not result in an increase in cost to the Owner.
 - 8.3.5.3 The request is timely, fully documented, and properly submitted.
 - 8.3.5.4 The Contractor cannot provide the specified product, assembly or method of construction within the Contract Time.
 - 8.3.5.5 The request directly relates to an "or-equal" clause or similar language in the Contract Documents.
 - 8.3.5.6 The request directly relates to a "product design standard" or "performance standard" clause in the Contract Documents.
 - 8.3.5.7 The requested substitution offers the Owner a substantial advantage in cost, time, energy conservation or other considerations, after deducting additional responsibilities the Owner must assume.
 - 8.3.5.8 The specified product or method of construction cannot receive necessary approval by an authority having jurisdiction, and the ODR can approve the requested substitution.

- 8.3.5.9 The Contractor cannot provide the specified product, assembly or method of construction in a manner that is compatible with other materials and where the Contractor certifies that the substitution will overcome the incompatibility.
 - 8.3.5.10 The Contractor cannot coordinate the specified product, assembly or method of construction with other materials and where the Contractor certifies they can coordinate the proposed substitution.
 - 8.3.5.11 The specified product, assembly or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provides the required warranty.
- 8.3.6 Unauthorized Substitutions at Contractor's Risk. The Contractor is financially responsible for any additional costs or delays resulting from using materials, equipment or fixtures other than those specified. The Contractor shall reimburse the Owner for any increased design or contract administration costs resulting from such unauthorized substitutions.

8.4 Field Mock-up

- 8.4.1 Mockups shall be constructed prior to commencement of a specified scope of work to confirm acceptable workmanship.
 - 8.4.1.1 As a minimum, field mock-ups shall be constructed for roofing systems, exterior veneer / finish systems, glazing systems, and any other Work requiring a mock-up as identified throughout the Contract Documents. Mockups for systems not part of the project scope shall not be required.
 - 8.4.1.2 Mock-ups may be incorporated into the Work if allowed by the Contract Documents and if acceptable to the ODR. If mock-ups are freestanding, they shall remain in place until otherwise directed by the Owner.
 - 8.4.1.3 The Contractor shall include field mock-ups in their Work Progress Schedule and shall notify the ODR and Architect/Engineer of readiness for review sufficiently in advance to coordinate review without delay.

8.5 Inspection During Construction

- 8.5.1 The Contractor shall provide sufficient, safe, and proper facilities, including equipment as necessary for safe access, at all reasonable times for observation and/or inspection of the Work by the Owner and its agents.
- 8.5.2 The Contractor shall not cover up any work with finishing materials or other building components prior to providing the Owner and its agents an opportunity to perform an inspection of the Work.

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- 8.5.2.1 Should corrections of the Work be required for approval, do not cover up corrected Work until the Owner indicates approval.
- 8.5.2.2 Provide notification of at least five (5) working days or otherwise as mutually agreed, to the ODR of the anticipated need for a cover up inspection. Should the ODR fail to make the necessary inspection within the agreed period, the Contractor may proceed with cover up Work, but is not relieved of responsibility for Work to comply with requirements of the Contract Documents.

Article 9. Construction Schedules

- 9.1. Contract Time. TIME IS AN ESSENTIAL ELEMENT OF THE CONTRACT. The Contract Time is the time between the dates indicated in the Notice to Proceed for commencement of the Work and for achieving Substantial Completion and Final Completion. The Contract Time can be modified only by Change Order. Failure to achieve Substantial Completion within the Contract Time, Final Completion within thirty (30) days following Substantial Completion or as otherwise agreed to in writing will cause damage to the Owner and may subject the Contractor to Liquidated Damages as provided in the Contract Documents.
- 9.2. Notice to Proceed. The Owner will issue a Notice to Proceed which shall state the dates for beginning Work and for achieving Substantial Completion and Final Completion of the Work.
- 9.3. Work Progress Schedule. Refer to Special Conditions and Division 1 General Administration Specifications for additional schedule requirements. Unless indicated otherwise in those documents, Contractor shall submit their initial Work Progress Schedule for the Work in relation to the entire Project not later than twenty-one (21) days after the effective date of the Notice to Proceed to the ODR and the AE. . Unless otherwise indicated in the Contract Documents, the Work Progress Schedule shall be computerized Critical Path Method (CPM) with full reporting capability. This initial schedule shall indicate the dates for starting and completing the various aspects required to complete the Work, including mobilization, procurement, installation, testing, inspection, and acceptance of all the Work of the Contract. When acceptable to the Owner, the initially accepted schedule shall be the Baseline Schedule for comparison to actual conditions throughout the contract duration.
- 9.3.1 Schedule Requirements. Submit electronic and paper copy of the initial Work Progress Schedule reflecting accurate and reliable representations of the planned progress of the Work, the Work to date if any, and of the Contractor's actual plans for its completion. Organize and provide adequate detail so the Schedule is capable of measuring and forecasting the effect of delaying events on completed and uncompleted activities.
- 9.3.1.1 Re-submit initial Schedule as required to address review comments from AE and ODR until such Schedule is accepted as the Baseline Schedule.
- 9.3.1.2 Submittal of a schedule, schedule revision or schedule update constitutes the Contractor's representation to the Owner of the accurate depiction of all progress to date and that the Contractor will follow the schedule as submitted in performing the Work.
- 9.3.2 Schedule Updates. Update the Work Progress Schedule and the Submittal Schedule monthly, as a minimum, to reflect progress to date

and current plans for completing the Work, and submit paper and electronic copy of the update to the AE and ODR as directed. The Owner has no duty to make progress payments unless accompanied by the updated Work Progress Schedule. Show the anticipated date of completion reflecting all extensions of time granted through Change Order as of the date of the update. The Contractor may revise the Progress Schedule logic only with the Owner's concurrence when in the Contractor's judgment it becomes necessary for the management of the Work. Identify all proposed changes to schedule logic to Owner and to the AE via an Executive Summary accompanying the updated schedule for review prior to implementation of revisions.

9.3.3 The Work Progress Schedule is for the Contractor's use in managing the Work and submittal of the Schedule, and successive updates or revisions, is for the information of the Owner and to demonstrate that the Contractor has complied with requirements for planning the Work. The Owner's acceptance of a schedule, schedule update or revision constitutes the Owner's agreement to coordinate its own activities with the Contractor's activities as shown on the schedule.

9.3.3.1 Acceptance of the Work Progress Schedule, or update and/or revision thereto does not indicate any approval of the Contractor's proposed sequences and duration.

9.3.3.2 Acceptance of a Work Progress Schedule update or revision indicating early or late completion does not constitute the Owner's consent, alter the terms of the Contract, or waive either the Contractor's responsibility for timely completion or the Owner's right to damages for the Contractor's failure to do so.

9.3.3.3 The Contractor's scheduled dates for completion of any activity or the entire Work do not constitute a change in terms of the contract. Change Orders are the only method of modifying the completion Date(s) and Contract time.

9.4. Ownership of Float. Unless indicated otherwise in the Contract Documents, the Contractor shall develop the schedule and their execution plan to provide a minimum of 10 percent total float at the project level at acceptance of the Baseline Schedule. Float time contained in the Work Progress Schedule is not for the exclusive benefit of the Contractor or the Owner, but belongs to the Project and may be consumed by either party as needed on a first-used basis.

9.5. Completion of Work. The Contractor is accountable for completing the Work in the time stated in the Contract, or as otherwise amended by Change Order.

9.5.1 If, in the judgment of the Owner, the work is behind schedule and the rate of placement of work is inadequate to regain scheduled progress to insure timely completion of the entire work or a separable portion thereof, the Contractor, when so informed by the Owner, shall immediately take action to increase the rate of work placement by:

- 9.5.1.1 An increase in working forces.
 - 9.5.1.2 An increase in equipment or tools.
 - 9.5.1.3 An increase in hours of work or number of shifts.
 - 9.5.1.4 Expedite delivery of materials.
 - 9.5.1.5 Other action proposed if acceptable to Owner.
- 9.5.2 Within ten (10) calendar days after such notice from the ODR, the Contractor shall notify the ODR in writing of the specific measures taken and/or planned to increase the rate of progress. Include an estimate as to the date of scheduled progress recovery and an updated Work Progress Schedule illustrating the Contractor's plan for achieving timely completion of the project. Should the ODR deem the plan of action inadequate, take additional steps or make adjustments as necessary to its plan of action until it meets with the ODR's approval.

9.6 Modification of the Contract Time

- 9.6.1 Delays and extension of time as hereinafter described are valid only if executed in accordance with provisions set forth in Article 11.
- 9.6.2 When a delay defined herein as excusable prevents the Contractor from completing the Work within the Contract Time, the Contractor is entitled to an extension of time. The Owner will make an equitable adjustment and extend the number of calendar days lost because of excusable delay, as measured by the Contractor's progress schedule. All extensions of time will be granted in calendar days. In no event, however, will an extension of time be granted for delays that merely extend the duration of non-critical activities, or which only consume float without delaying the project completion date.
 - 9.6.2.1 "A Weather Day" is a day on which the Contractor's current schedule indicates Work is to be done, and on which inclement weather and related site conditions prevent the Contractor from performing seven continuous hours of Work between the hours of 7:00 a.m. and 6:00 p.m. Weather days are excusable delays. When weather conditions at the site prevent work from proceeding, immediately notify the ODR for confirmation of the conditions. At the end of each calendar month, submit to the ODR and AE a list of Weather Days occurring in that month along with documentation of the impact on critical activities. Based on confirmation by the ODR, any time extension granted will be issued by Change Order. If the Contractor and Owner cannot agree on the time extension, the Owner may issue a ULCO for fair and reasonable time extension.

- 9.6.2.2 Excusable Delay. The Contractor is entitled to an equitable adjustment of time, issued via change order, for delays caused by the following:
- 9.6.2.2.1 Errors, omissions and imperfections in design which the AE corrects by means of changes in the drawings and specifications.
 - 9.6.2.2.2 Unanticipated physical conditions at the Site which the AE corrects by means of changes to the drawings and specifications or for which the ODR directs changes in the Work identified in the Contract Documents.
 - 9.6.2.2.3 Changes in the Work that effect activities identified in the Contractor's schedule as "critical" to completion of the entire Work, if such changes are ordered by the ODR or the AE.
 - 9.6.2.2.4 Suspension of Work for unexpected natural events (sometimes called "acts of God"), civil unrest, strikes or other events which are not within the reasonable control of the Contractor.
 - 9.6.2.2.5 Suspension of Work for convenience of the ODR, which prevents Contractor from completing the Work within the Contract Time.
- 9.6.3 The Contractor's relief in the event of such delays is the time impact to the critical path as determined by analysis of the Contractor's schedule. In the event that the Contractor incurs additional direct costs because of the delay, they are to be determined pursuant to the provisions of Article 11.
- 9.7 No Damages for Delay. The Contractor has no claim for monetary damages for delay or hindrances to the work from any cause, including without limitation any act or omission of the Owner.
- 9.8 Concurrent Delay. When the completion of the Work is simultaneously delayed by an excusable delay and a delay arising from a cause not designated as excusable, the Contractor may not be entitled to a time extension for the period of concurrent delay
- 9.9 Other Time Extension Requests. Time extensions requested in association with changes to the Work directed or requested by the Owner shall be included with the Contractor's proposed costs for such change. Time extensions requested for inclement weather are covered by paragraph 9.6.2.1 above. If the Contractor believes that the completion of the Work is delayed by a circumstance other than for changes directed to the Work or weather, they shall give the ODR written notice, stating the nature of the delay and the activities potentially affected, within five (5) calendar days after the onset of the event or circumstance giving rise to the excusable delay. Provide sufficient written evidence to document the delay. In the case of a continuing cause of delay, only one claim is necessary. State claims for extensions of time in numbers of whole or half calendar days.

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- 9.9.1 Within ten (10) calendar days after the cessation of the delay, the Contractor shall formalize its request for extension of time in writing to include a full analysis of the schedule impact of the delay and substantiation of the excusable nature of the delay. All Changes to the Contract Time or made as a result of such claims is by Change Order, as set forth in Article 11.
- 9.9.2 No extension of time releases the Contractor or the Surety furnishing a performance or payment bond from any obligations under the contract or such a bond. Those obligations remain in full force until the discharge of the Contract.
- 9.9.3 Contents of Time Extension Requests. Provide with each Time Extension Request a quantitative demonstration of the impact of the delay on project completion time, based on the Work Progress Schedule. Include with Time Extension Requests a reasonably detailed narrative setting forth:
 - 9.9.3.1 The nature of the delay and its cause; the basis of the Contractor's claim of entitlement to a time extension.
 - 9.9.3.2 Documentation of the actual impacts of the claimed delay on the critical path indicated in the Contractor's Work Progress Schedule, and any concurrent delays.
 - 9.9.3.3 Description and documentation of steps taken by the Contractor to mitigate the effect of the claimed delay, including, when appropriate, the modification of the Work Progress Schedule.
- 9.9.4 Owner's Response. The Owner will respond to the Time Extension Request by providing to the Contractor written notice of the number of days granted, if any, and giving its reason if this number differs from the number of days requested by the Contractor.
 - 9.9.4.1 The Owner will not grant time extensions for delays that do not affect the Contract Completion Date.
 - 9.9.4.2 The Owner will respond to each properly submitted Time Extension Request within fifteen (15) calendar days following receipt. If the Owner cannot reasonably make a determination about the Contractor's entitlement to a time extension within that time, the Owner will notify the Contractor in writing. Unless otherwise agreed by the Contractor, the Owner has no more than fifteen (15) additional calendar days to prepare a final response. If the Owner fails to respond within forty-five (45) calendar days from the date the Time Extension Request is received, the Contractor is entitled to a time extension in the amount requested.
- 9.10 Failure to Complete Work Within the Contract Time. **TIME IS OF THE ESSENCE OF THIS CONTRACT.** The Contractor's failure to substantially complete the Work within the Contract Time or to achieve final completion as required will cause damage to the Owner. These damages are liquidated

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by agreement of the Contractor and the Owner, as set forth in the Contract Documents. -

- 9.11 Liquidated Damages. The Owner may collect Liquidated Damages due from the Contractor directly or indirectly by reducing the contract sum in the amount of Liquidated Damages stated in the Contract Documents.

Article 10. Payments

10.1. Schedule of Values. The Contractor shall submit to the ODR and the AE for acceptance a Schedule of Values, or Work Breakdown, accurately itemizing material and labor for the various classifications of the Work based on the organization of the specification sections and using the same activity names and terms as the Work Progress Schedule. The accepted Schedule of Values will be the basis for the progress payments under the Contract.

10.1.1 No progress payments will be made prior to receipt and acceptance of the Schedule of Values, provided in such detail as required by the ODR, and submitted not less than twenty-one calendar (21) days prior to the first request for payment. The Schedule of Values shall follow the order of trade divisions of the specifications and include costs for general conditions, fees, contingencies, and Owner cash allowances, if applicable, so that the sum of the items will equal the contract price. As appropriate, assign each item labor and/or material values, the subtotal thereof equaling the value of the work in place when complete.

10.1.2 The Contractor shall retain a copy of all worksheets used in preparation of its bid or proposal, supported by a notarized statement that the worksheets are true and complete copies of the documents used to prepare the bid or proposal. Make the worksheets available to the ODR at the time of Contract execution. Thereafter grant the Owner during normal business hours access to said notarized copy of worksheets at any time during the period commencing upon execution of the Contract and ending one year after final payment.

10.2. Progress Payments. The Contractor will receive periodic progress payments for Work performed, materials in place, suitably stored on site, or as otherwise agreed to by the Owner and the Contractor. Payment is not due until receipt by the ODR or his designee of a correct and complete Pay Application in electronic and/or hard copy format as set forth in Supplementary General Conditions, Special Conditions or Division 1 Specifications, and certified by the AE. Progress payments are made provisionally and do not constitute acceptance of work not in accordance with the Contract Documents. The Owner will not process progress payment applications for Change Order work until all parties execute the Change Order.

10.2.1 Preliminary Pay Worksheet once each month that a progress payment is to be requested, the Contractor shall submit to the Architect/Engineer and the ODR a complete, clean copy of a preliminary pay worksheet or Preliminary Pay Application, to include the following:

10.2.1.1 The Contractor's estimate of the amount of Work performed, labor furnished and materials incorporated into the Work, using the established Schedule of Values.

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- 10.2.1.2 An updated Work Progress Schedule including the Executive Summary and all required schedule reports.
- 10.2.1.3 HUB Subcontracting Plan reports.
- 10.2.1.4 Such additional documentation as Owner may require as set forth in the Supplementary General Conditions or elsewhere in the Contract Documents.
- 10.2.2 Contractor's Application for Progress Payment. As soon as practicable, but in no event later than seven days after receipt of the Preliminary Pay Worksheet, the AE and ODR will meet with the Contractor to review the Preliminary Pay Worksheet and to observe the condition of the Work. Based on this review, the ODR and the AE may require modifications to the Preliminary Pay Worksheet prior to the submittal of an application for progress payment, and will promptly notify the Contractor of revisions necessary for approval. As soon as practicable, the Contractor shall submit its Invoice on the appropriate and completed form, reflecting the required modifications to the Schedule of Values required by the AE and/or ODR. Attach all additional documentation required by the ODR and/or AE, as well as an affidavit affirming that all payrolls, bills for labor, materials, equipment, subcontracted work and other indebtedness connected with the Contractor's invoice are paid or will be paid within the time specified in Tex. Gov't Code, Chapter 2251. No invoice is complete unless it fully reflects all required modifications, and attaches all required documentation including the Contractor's affidavit.
- 10.2.3 Certification by Architect/Engineer. Within five days or earlier following the AE's receipt of the Contractor's formal invoice, the AE will review the application for progress payment for completeness, and forward to the ODR. The AE will certify that the application is complete and payable, or that it is incomplete, stating in particular what is missing. If the Invoice is incomplete, the Contractor shall make the required corrections and resubmit the Invoice for processing.
- 10.3 Owner's Duty to Pay. The Owner has no duty to pay the Contractor except on receipt by the ODR of; 1) a complete Invoice certified by the AE and 2) the Contractor's updated Work Progress Schedule, and 3) confirmation that the Contractor's as-built documentation at the site is kept current.
 - 10.3.1 Payment for stored materials and/or equipment confirmed by the Owner and AE to be on-site or otherwise properly stored is limited to 85 percent of the invoice price or 85 percent of the scheduled value for the materials or equipment, whichever is less.
 - 10.3.2 Retainage. The Owner will withhold from each progress payment, as retainage, 5 percent of the total earned amount, the amount authorized by law, or as otherwise set forth in the Supplementary General Conditions. - Retainage is managed in conformance with Tex. Gov't Code, Chapter 2252, Government Code, subchapter B.

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- 10.3.2.1 The Contractor shall provide written consent of its Surety for any request for reduction or release of retainage.
- 10.3.2.2 At least sixty-five (65) percent of the total Contract must be completed before the Owner can consider a retainage reduction or release.
- 10.3.3 Price Reduction to Cover Loss. The Owner may reduce any Periodic Invoice, or application for Progress Payment, prior to payment to the extent necessary to protect the Owner from loss on account of actions of the Contractor including, but not limited to:
 - 10.3.3.1 Defective or incomplete Work not remedied.
 - 10.3.3.2 Damage to Work of a separate Contractor.
 - 10.3.3.3 Failure to maintain scheduled progress or reasonable evidence that the Work will not be completed within the Contract Time.
 - 10.3.3.4 Persistent failure to carry out the Work in accordance with the Contract Documents.
 - 10.3.3.5 Reasonable evidence that the Work cannot be completed for the unpaid portion of the contract sum.
 - 10.3.3.6 Assessment of fines for violations of Prevailing Wage Rate law; or
 - 10.3.3.7 Failure to include the appropriate amount of retainage for that periodic progress payment.
- 10.3.4 Title to all material and Work covered by progress payments transfers to the Owner upon payment.
 - 10.3.4.1 Transfer of title to Owner does not relieve the Contractor of the sole responsibility for the care and protection of materials and Work upon which payments have been made until final acceptance of the entire Work, or the restoration of any damaged Work, or waive the right of the Owner to require the fulfillment of all the terms of the Contract.
- 10.4 Progress payments to the Contractor do not release the Contractor or its surety from any obligations under this Contract.
 - 10.4.1 Upon the Owner's request, the Contractor shall furnish manifest proof of the status of Subcontractor's accounts in a form acceptable to the Owner.
 - 10.4.2 Pay estimate certificates must be signed by a corporate officer or a representative duly authorized by the Contractor.
 - 10.4.3 Provide copies of bills of lading, invoices, delivery receipts or other evidence of the location and value of such materials in requesting payment for materials.

- 10.4.4 For purposes of Tex. Gov't Code § 2251.021 (a) (2), the date the performance of service is complete is the date when the Owner's representative approves the application for payment.
- 10.5 Off-Site Storage. With prior approval by the Owner and in the event Contractor elects to store materials at an off-site location, abide by the following conditions, unless otherwise agreed to in writing by the Owner.
- 10.5.1.1 Store materials in a Bonded Commercial Warehouse.
 - 10.5.1.2 Provide separate Insurance Coverage adequate not only to cover materials while in storage, but also in transit from the off-site storage areas to the project site. Copies of duly authenticated Certificates of Insurance, made out to insure the State Agency which is signatory to the contract, must be filed with the Owner's representative.
 - 10.5.1.3 Inspection by Owner's representative is allowed at any time. The Owner's Inspectors must be satisfied with the security, control, maintenance, and preservation measures.
 - 10.5.1.4 Materials for this project are physically separated and marked for the project in a sectioned-off area. Only materials which have been approved through the submittal process are to be considered for payment.
 - 10.5.1.5 Owner reserves the right to reject materials at any time prior to final acceptance of the complete Contract if they do not meet Contract requirements regardless of any previous progress payment made.
 - 10.5.1.6 With each monthly payment estimate, submit a report to the ODR, AE, and Inspector listing the quantities of materials already paid for and still stored in the off-site location.
 - 10.5.1.7 Make warehouse records, receipts and invoices available to Owner's representatives, upon request, to verify the quantities and their disposition.
 - 10.5.1.8 In the event of Contract termination or default by Contractor, the items in storage off-site, upon which payment has been made, will be promptly turned over to Owner or Owner's agents at a location near the jobsite as directed by the ODR. The full provisions of PERFORMANCE AND PAYMENT BONDS on this project cover the materials off-site in every respect as though they were stored on the Project Site.

Article 11. Changes

- 11.1. Change Orders. A Change Order issued after execution of the Contract is a written order to the Contractor, signed by the ODR, the Contractor, and the Architect/Engineer, authorizing a change in the Work or an adjustment in the Contract Sum or the Contract Time. The Contract Sum and the Contract Time can only be changed by Change Order. A Change Order signed by the Contractor indicates his agreement therewith, including the adjustment in the Contract Sum and/or the Contract Time. The ODR may issue written authorization for the Contractor to proceed with work of a change order in advance of final execution by all parties.
- 11.1.1 The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, and the Contract Sum and the Contract Time will be adjusted accordingly. All such changes in the Work shall be authorized by Change Order, and shall be performed under the applicable conditions of the Contract Documents. If such changes cause an increase or decrease in the Contractor's cost of, or time required for, performance of the Contract, an equitable adjustment shall be made and confirmed in writing in a Change Order.
- 11.1.2 It is recognized by the parties hereto and agreed by them that the specifications and drawings may not be complete or free from errors, omissions and imperfections or that they may require changes or additions in order for the work to be completed to the satisfaction of Owner and that, accordingly, it is the express intention of the parties, notwithstanding any other provisions in this Contract, that any errors, omissions or imperfections in such specifications and drawings, or any changes in or additions to same or to the work ordered by Owner and any resulting delays in the work or increases in Contractor's costs and expenses, shall not constitute or give rise to any claim, demand or cause of action of any nature whatsoever in favor of Contractor, whether for breach of contract, *quantum meruit*, or otherwise; provided, however, that Owner shall be liable to Contractor for the sum stated to be due Contractor in any Change Order approved and signed by both parties, it being agreed hereby that such sum, together with any extension of time contained in said Change Order, shall constitute full compensation to Contractor for all costs, expenses and damages to Contractor, whether direct, consequential or otherwise in any wise incident to, arising out of, or resulting directly or indirectly from the work performed by Contractor under such Change Order.
- 11.1.3 Procedures for administration of Change Orders shall be established by the Owner and stated in Supplementary General Conditions, Special Conditions, or elsewhere in the Contract Documents.

- 11.1.4 Except as provided above, no order, oral statement, or direction of the Owner or his duly appointed representative shall be treated as a change under this article or entitle the Contractor to an adjustment.
- 11.1.5 The Contractor agrees that the Owner or any of its duly authorized representatives shall have access and the right to examine any directly pertinent books, documents, papers, and records of the Contractor. Further, the Contractor agrees to include in all its subcontracts a provision to the effect that the subcontractor agrees that the Owner or any of its duly authorized representatives shall have access to and the right to examine any directly pertinent books, documents, papers and records of such contractor relating to any claim arising from this Contract, whether or not the subcontractor is a party to the claim. The period of access and examination described herein which relates to appeals under the Disputes article of the Contract, litigation, or the settlement of claims arising out of the performance of this Contract shall continue until final disposition of such claims, appeals or litigation.
- 11.2. Unit Prices: If unit prices are stated in the Contract Documents or subsequently agreed upon, and if the quantities originally contemplated are so changed in a proposed Change Order that application of the agreed unit prices to the quantities of work proposed will cause substantial inequity to the Owner or the Contractor, the applicable unit prices shall be equitably adjusted as provided in the Special Conditions or as agreed to by the parties and incorporated into Change Order.
- 11.3. Claims for Additional Costs
 - 11.3.1 If the Contractor wishes to make a claim for an increase in the Contract Sum not related to a requested change, they shall give the Owner and the Architect/Engineer written notice thereof within twenty-one (21) days after the occurrence of the event giving rise to such claim, but, in any case before proceeding to execute the work considered to be additional cost or time, except in an emergency endangering life or property in which case the Contractor shall act in accordance with Article 7.2.1. No such claim shall be valid unless so made. If the Owner and the Contractor cannot agree on the amount of the adjustment in the Contract Sum, it shall be determined as set forth under Article 15. Any change in the Contract Sum resulting from such claim shall be authorized by Change Order.
 - 11.3.2 If the Contractor claims that additional cost is involved because of, but not limited to, 1) any written interpretation of the Contract Documents, 2) any order by the Owner to stop the Work pursuant to Article 14 where the Contractor was not at fault, 3) any written order for a minor change in the Work issued pursuant to Article 11.4, the Contractor shall make such claim as provided in Article 11.3.1.

- 11.3.3 Should the Contractor or his Subcontractors fail to call attention of the AE to obvious discrepancies or omissions in the Bid/Proposal Documents during the pre-bid/pre-proposal period, but claim additional costs for corrective work after contract award, the Owner may assume intent to circumvent competitive bidding for necessary corrective work. In such case, the Owner may choose to let a separate contract for the corrective work, or issue a Unilateral Change Order to require performance by the Contractor. Claims for time extensions or for extra cost resulting from delayed notice of contract document discrepancies or omissions will not be considered by the Owner.
- 11.4. Minor Changes. The AE, with concurrence of the ODR, will have authority to order minor changes in the Work not involving an adjustment in the Contract Sum or an extension of the Contract Time. Such changes shall be effected by written order which the Contractor shall carry out promptly and record on as-built record documents.
- 11.5. Concealed Site Conditions. If, in the performance of the Contract, subsurface, latent or concealed conditions at the site are found to be materially different from the information included in the bid/proposal documents, or if unknown conditions of an unusual nature are disclosed differing materially from the conditions usually inherent in work of the character shown and specified, the ODR and the Architect/Engineer shall be notified in writing of such conditions before they are disturbed. Upon such notice, or upon its own observation of such conditions, the Architect/Engineer, with the approval of the ODR, will promptly make such changes in the Drawings and Specifications as they deem necessary to conform to the different conditions, and any increase or decrease in the cost of the Work, or in the time within which the Work is to be completed, resulting from such changes will be adjusted by Change Order, subject to the prior approval of the ODR.
- 11.6. Extension of Time. All Changes to the Contract Time shall be made as a consequence of requests as required under Article 9.6, and as documented by Change Order as provided under Article 11.1.
- 11.7. Administration of Change Order Requests
- All changes in the Contract shall be administered in accordance with procedures approved by the Owner, and when required make use of such electronic information management system(s) as the owner may employ.
- 11.7.1 Routine changes in the Construction Contract shall be formally initiated by the Architect/Engineer by means of a Change Request form detailing requirements of the proposed change for pricing by the Contractor. This action may be preceded by communications between the Contractor, AE and ODR concerning the need and nature of the change, but such communications shall not constitute a basis for beginning the proposed Work by the Contractor. Except for emergency conditions described below, approval of the Contractor's

cost proposal by the Architect/Engineer and ODR will be required for authorization to proceed with the Work being changed. The Owner will not be responsible for the cost of work changed without prior approval and the Contractor may be required to remove work so installed.

- 11.7.2 All proposed costs for change order work must be supported by itemized accounting of material, equipment and associated itemized installation costs in sufficient detail, following the outline and organization of the established Schedule of Values, to permit analysis by the AE and ODR using current estimating guides and/or practices. Photocopies of Subcontractor and vendor proposals shall be furnished unless specifically waived by the ODR. Contractor shall provide written response to change request within twenty-one (21) calendar days of receipt.
- 11.7.3 Any unexpected circumstance which necessitates an immediate change in order to avoid a delay in progress of the Work may be expedited by verbal communication and authorization between the Contractor and Owner, with written confirmation following within twenty-four (24) hours. A limited scope not-to-exceed estimate of cost and time will be requested prior to authorizing Work to proceed. Should the estimate be impractical for any reason, the ODR may authorize the use of detailed cost records of such work to establish and confirm the actual costs and time for documentation in a formal Change Order.
- 11.7.4 Emergency changes to save life or property may be initiated by the Contractor alone (see Article 7.3) with the claimed cost and/or time of such work to be fully documented as to necessity and detail of the reported costs and/or time.

11.8. Pricing Change Order Work

The amounts that the Contractor and/or its Subcontractors add to a Change Order for profit and overhead will also be considered by the Owner before approval is given. The amounts established hereinafter are the maximums that are acceptable to the Owner.

- 11.8.1 For work performed by its forces, the Contractor will be allowed their actual costs for materials, the total amount of wages paid for labor, the total cost of Federal Old Age Benefit (Social Security Tax) and of Worker's Compensation and Comprehensive General Liability Insurance, plus Bond cost if the change results in an increase in the Bond premium paid by the Contractor. To the total of the above costs, the Contractor will be allowed to add a percentage as noted below to cover overhead and profit combined. Overhead shall be considered to include insurance other than mentioned above, field and office supervisors and assistants, including safety and scheduling personnel, use of small tools, incidental job burdens and general Home Office expenses, and no separate allowance will be made therefore.

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Allowable percentages for overhead and profit on changes will not exceed 15 percent if the total of self-performed work is less than or equal to \$10,000, 10 percent if the total of self-performed work is between \$10,000 and \$20,000 and 7.5 percent if the total of self-performed work is over \$20,000, for any specific change priced.

- 11.8.2 For subcontracted Work each affected Subcontractor shall figure its costs, overhead and profit as described above for Contractor's work, all subcontractor costs shall be combined, and to that total subcontractor cost the Contractor will be allowed to add a maximum mark-up of 10 percent if the total of all subcontracted work is less than or equal to \$10,000, 7.5 percent if the total of all subcontracted work is between \$10,000 and \$20,000 and 5 percent if the total of all subcontractor work is over \$20,000.

- 11.8.3 On changes involving both additions and deletions, percentages for overhead and profit will be allowed only on the net addition.

The Owner does not accept and will not pay for additional contract cost identified as indirect, consequential, or as damages caused by delay.

Article 12. Project Completion and Acceptance

12.1. Closing Inspections

12.1.1 **Substantial Completion Inspection.** When the Contractor considers the entire Work or part thereof Substantially Complete, it shall notify the ODR in writing that the Work will be ready for Substantial Completion Inspection on a specific date. The Contractor shall include with this notice the Contractor's Punchlist to indicate that it has previously inspected all the Work associated with the request for inspection, has corrected items where possible, and includes all items scheduled for completion or correction prior to final inspection. The failure to include any items on this list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. If any of the items on this list prevents the building from the use to which it is intended, the Contractor shall not request a Substantial Completion Inspection. The Owner and its representatives will review the list of items and schedule the requested inspection, or inform the Contractor in writing that such an inspection is premature because the Work is not sufficiently advanced or conditions are not as represented on the Contractor's list.

12.1.1.1. Prior to the Substantial Completion Inspection, the Contractor shall furnish a copy of its marked-up As-Built Drawings and a preliminary copy of each instructional manual, maintenance and operating manual, parts catalog, wiring diagrams, spare parts, specified written warranties and like publications or parts for all installed equipment, systems and like items. Delivery of these items is a prerequisite for requesting the Substantial Completion Inspection.

12.1.1.2. On the date requested by Contractor, or as mutually agreed upon pending the status of the open items list, the AE, ODR, the Contractor and other Owner representatives as determined by the Owner, will jointly attend the Substantial Completion Inspection, which shall be conducted by the ODR or their delegate. If the ODR determines that the Work is Substantially Complete, the ODR will issue a Certificate of Substantial Completion to be signed by the AE, Owner and Contractor, establishing the date of Substantial Completion. AE will provide with this certificate a list of punchlist items (the Pre-Final Punchlist) for completion prior to final inspection. This list may include items in addition to those on the Contractor's punchlist, which the inspection team deems necessary to correct or complete prior to Final Inspection. If the Owner occupies the facility upon determination of Substantial Completion, the Contractor shall complete all corrective Work at the

convenience of the Owner, without disruption to Owner's use of the facility for its intended purposes.

- 12.1.2 Final Inspection. The Contractor shall complete the list of items identified on the Pre-Final Punchlist prior to requesting a Final Inspection. Unless otherwise specified, or otherwise agreed in writing by the parties as documented on the Certificate of Substantial Completion, the Contractor shall complete and/or correct all Work within thirty (30) days of the Substantial Completion date. Upon completion of the Pre-Final Punchlist work, the Contractor shall give written notice to the ODR and AE that the Work will be ready for Final Inspection on a specific date. The Contractor shall accompany this notice with a copy of the updated Pre-Final Punchlist indicating resolution of all items. On the date specified or as soon thereafter as is practicable, the ODR, AE and the Contractor will inspect the Work. The AE will submit to the Contractor a Final Punchlist of open items that the inspection team requires corrected or completed before final acceptance of the Work.
- 12.1.2.1 Correct or complete all items on the Final Punchlist before requesting Final Payment. Unless otherwise agreed to in writing by the parties, complete this work within seven (7) days of receiving the Final Punchlist. Upon completion of the Final Punchlist, notify the AE and ODR in writing stating the disposition of each Final Punchlist item. The AE, Owner and Contractor shall promptly inspect the completed items. When the Final Punchlist is complete, and the Contract is fully satisfied according to the Contract Documents the ODR will issue a certificate establishing the date of Final Completion. Completion of all Work is a condition precedent to the Contractor's right to receive Final Payment.
- 12.1.3 Annotation. Any Certificate issued under this Article may be annotated to indicate that it is not applicable to specified portions of the Work, or that it is subject to any limitation as determined by the Owner.
- 12.1.4 Purpose of Inspection. Inspection is for determining the completion of the Work, and does not relieve the Contractor of its overall responsibility for completing the Work in a good and competent fashion, in compliance with the Contract. Work accepted with incomplete punchlist items or failure of the Owner or other parties to identify Work that does not comply with the Contract Documents or is defective in operation or workmanship does not constitute a waiver of the Owner's rights under the Contract or relieve the Contractor of its responsibility for performance or warranties.
- 12.1.5 Additional Inspections
 - 12.1.5.1 If the Owner's inspection team determines that the Work is not Substantially Complete at the Substantial Completion

Inspection, the ODR or AE will give the Contractor written notice listing cause(s) of the rejection. The ODR will set a time for completion of incomplete or defective work. Complete or correct all work so designated prior to requesting a second Substantial Completion Inspection.

12.1.5.2 If the Owner's inspection team determines that the Work is not complete at the Final Inspection, the ODR or the AE will give the Contractor written notice listing the cause(s) of the rejection. The ODR will set a time for completion of incomplete or defective work. The Contractor shall complete or correct all Work so designated prior to again requesting a Final Inspection.

12.1.5.3 The Contract Agreement contemplates three (3) comprehensive inspections: the Substantial Completion Inspection, the Final Completion Inspection, and the Inspection of Completed Final Punchlist Items. The cost to the Owner of additional inspections resulting from the Work not being ready for one or more of these inspections is the responsibility of the Contractor. The Owner may issue a Unilateral Change Order deducting these costs from Final Payment. Upon the Contractor's written request, the Owner will furnish documentation of any costs so deducted. Work added to the Contract by Change Order after Substantial Completion Inspection is not corrective work for purposes of determining timely completion, or assessing the cost of additional inspections.

12.1.6 Phased Completion. The contract may provide, or project conditions may warrant, as determined by the ODR, that designated elements or parts of the Work be completed in phases. Where phased completion is required or specifically agreed to by the parties, the provisions of the contract related to Closing Inspections, Occupancy and Acceptance apply independently to each designated element or part of the Work. For all other purposes, unless otherwise agreed by the parties in writing, Substantial Completion of the Work as a whole is the date on which the last element or part of the Work completed receives a Substantially Completion certificate. Final Completion of the Work as a whole is the date on which the last element or part of the Work completed receives a Final Completion certificate.

12.2 Owner's Right of Occupancy. The Owner may occupy or use all or any portion of the Work following Substantial Completion, or at any earlier stage of completion. Should the Owner wish to use or occupy the Work, or part thereof, prior to Substantial Completion, the ODR will notify the Contractor in writing. Work performed on the premises by third parties on the Owner's behalf does not constitute occupation or use of the Work by the Owner for purposes of this Article. All Work performed by the Contractor after

occupancy, whether in part or in whole, shall be at the convenience of the Owner so as to not disrupt Owner's use of, or access to occupied areas of the project.

12.3 Acceptance & Payment

- 12.3.1 Request for Final Payment. Following the certified completion of all work, including all punch list items, cleanup, and the delivery of record documents, the Contractor shall submit a certified Application for Final Payment. Include all sums held as retainage and forward to the AE and the ODR for review and approval.
- 12.3.2 Final Payment Documentation. Submit, prior to or with the Application for Final Payment, final copies of all close out documents, maintenance and operating instructions, guarantees and warranties, certificates, record documents and all other items required by the Contract. Submit Consent of Surety to Final Payment and an affidavit that all payrolls, bills for materials and equipment, subcontracted work and other indebtedness connected with the Work, except as specifically noted, are paid, will be paid, or otherwise satisfied within the period of time required by Tex. Gov't Code, Chapter 2251. Furnish documentation establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of claims and liens arising out of the Contract. The Contractor may not subsequently submit a claim on behalf of a subcontractor or vendor unless the Contractor's affidavit notes that claim as an exception.
- 12.3.3 Architect/Engineer Approval. The AE will review a submitted Application for Final Payment promptly but in no event later than ten (10) days after its receipt. Prior to the expiration of this deadline, the AE will either 1) return the Application for Final Payment to Contractor with corrections for action and resubmission or 2) accept it, note their approval and send to Owner.
- 12.3.4 Offsets and Deductions. The Owner may deduct from the Final Payment all sums due from the Contractor. If the Certificate of Final Completion notes any Work remaining, incomplete, or defects not remedied, the Owner may deduct the cost of remedying such deficiencies from the Final Payment. On such deductions, the Owner will identify each deduction, the amount, and the explanation of the deduction on or by the 21st day after Owner's receipt of an approved Application for Final Payment. Such offsets and deductions shall be incorporated via a final Change Order, including Unilateral Change Order as may be applicable.
- 12.3.5 Final Payment Due. Final Payment is due and payable by the Owner, subject to all allowable offsets and deductions, on the 31st day following the Owner's approval of the Application for Payment. If the Contractor disputes any amount deducted by the Owner, the Contractor shall give notice of the dispute on or before the thirtieth

(30th) day following receipt of Final Payment. Failure to do so will bar any subsequent claim for payment of amounts deducted.-

- 12.3.6 Effect of Final Payment. Final Payment constitutes a waiver of all claims by the Owner, relating to the condition of the Work except those arising from:
 - 12.3.6.1 Faulty or defective Work appearing after Substantial Completion (latent defects); and/or
 - 12.3.6.2 Failure of the Work to comply with the requirements of the Contract Documents; and/or
 - 12.3.6.3 Terms of any warranties required by the Contract, or implied by law; and/or
 - 12.3.6.4 Claims arising from personal injury or property damage to third parties.
- 12.3.7 Waiver of Claims. Final payment constitutes a waiver of all claims and liens by the Contractor except those specifically identified in writing and submitted to the ODR prior to the application for Final Payment.
- 12.3.8 Effect on Warranty. Regardless of approval and issuance of Final Payment, the Contract is not deemed fully performed by the Contractor and closed until the expiration of all warranty periods.

Article 13. Warranty & Guarantee

- 13.1. Contractor's General Warranty and Guarantee. Contractor warrants to the Owner that all Work is executed in accordance with the Contract, complete in all parts and in accordance with approved practices and customs, and of the best finish and workmanship. The Contractor further warrants that unless otherwise specified, all materials and equipment incorporated in the Work under the Contract are new. The Owner may, at its option, agree in writing to waive any failure of the Work to conform to the Contract, and to accept a reduction in the Contract Price for the cost of repair or diminution in value of the Work by reason of such defect. Absent such a written agreement, the Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute and is not waived by any inspection or observation by the Owner, Architect/Engineer or others, by making any progress payment or final payment, by the use or occupancy of the Work or any portion thereof by the Owner, at any time, or by any repair or correction of such defect made by the Owner.
- 13.2. Warranty Period. Except as may be otherwise specified or agreed, the Contractor shall repair all defects in materials, equipment, or workmanship appearing within one year from the date of Substantial Completion of the Work. If Substantial Completion occurs by phase, then the warranty period for that particular Work begins on the date of such occurrence, or as otherwise stipulated on the Certificate of Substantial Completion for the particular Work.
- 13.3. Limits on Warranty. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
- 13.3.1 Modification or improper maintenance or operation by persons other than Contractor, Subcontractors, or any other individual or entity for whom Contractor is not responsible, unless Owner is compelled to undertake maintenance or operation due to the neglect of the Contractor.
 - 13.3.2 Normal wear and tear under normal usage after acceptance of the Work by the Owner.
- 13.4. Events Not Affecting Warranty. Contractor's obligation to perform and complete the Work in a good and workmanlike manner in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
- 13.4.1.1 Observations by Owner and/or AE.
 - 13.4.1.2 Recommendation to pay any progress or final payment by AE.

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- 13.4.1.3 The issuance of a certificate of Substantial Completion or any payment by Owner to Contractor under the Contract Documents.
 - 13.4.1.4 Use or occupancy of the Work or any part thereof by Owner.
 - 13.4.1.5 Any acceptance by Owner or any failure to do so.
 - 13.4.1.6 Any review of a Shop Drawing or sample submittal; or
 - 13.4.1.7 Any inspection, test or approval by others.
- 13.5 Separate Warranties. If a particular piece of equipment or component of the Work for which the contract requires a separate warranty is placed in continuous service before Substantial Completion, the Warranty Period for that equipment or component will not begin until Substantial Completion, regardless of any warranty agreements in place between suppliers and/or Subcontractors and the Contractor. The ODR will certify the date of service commencement in the Substantial Completion Certificate.
- 13.5.1 In addition to the Contractor's warranty and duty to repair, the Contractor expressly assumes all warranty obligations required under the Contract for specific building components, systems and equipment.
 - 13.5.2 The Contractor may satisfy any such obligation by obtaining and assigning to the Owner a complying warranty from a manufacturer, supplier, or Subcontractor. Where an assigned warranty is tendered and accepted by the Owner which does not fully comply with the requirements of the Contract, the Contractor remains liable to the Owner on all elements of the required warranty not provided by the assigned warranty.
- 13.6 Correction of Defects. Upon receipt of written notice from the Owner, or any agent of the Owner designated as responsible for management of the Warranty Period, of the discovery of a defect, the Contractor shall promptly remedy the defect(s), and provide written notice to the Owner and designated agent indicating action taken. In case of emergency where delay would cause serious risk of loss or damage to the Owner, or if the Contractor fails to remedy within 30 days, or within another period agreed to in writing, the Owner may correct the defect and be reimbursed the cost of remedying the defect from the Contractor or its Surety.
- 13.7 Certification of No Asbestos Containing Materials or Work. The Contractor shall ensure compliance with the Asbestos Hazard Emergency Response Act (AHERA– 40 CFR 763-99 (7)) from all subcontractors and materials suppliers, and shall provide a notarized certification to the Owner that all equipment and materials used in fulfillment of their contract responsibilities are non Asbestos Containing building Materials (ACBM). This certification must be provided no later than the Contractor's application for Final Payment.

Article 14. Suspension and Termination

- 14.1. Suspension of Work for Cause. The Owner may, at any time without prior notice, suspend all or any part of the Work, if after reasonable observation and/or investigation, the Owner determines it is necessary to do so to prevent or correct any condition of the Work, which constitutes an immediate safety hazard, or which may reasonably be expected to impair the integrity, usefulness or longevity of the Work when completed.
- 14.1.1.1. The Owner will give the Contractor a written notice of suspension for cause, setting forth the reason for the suspension and identifying the Work suspended. Upon receipt of such notice, the Contractor shall immediately stop the Work so identified. As soon as practicable following the issuance of such a notice, the Owner will initiate and complete a further investigation of the circumstances giving rise to the suspension, and issue a written determination of the findings.
- 14.1.1.2. If it is confirmed that the cause was within the control of the Contractor, the Contractor will not be entitled to an extension of time or any compensation for delay resulting from the suspension. If the cause is determined not to have been within the control of the Contractor, and the suspension has prevented the Contractor from completing the Work within the Contract Time, the suspension is an Excusable Delay and a Time Extension will be granted through a Change Order.
- 14.1.1.3. Suspension of work under this provision will be no longer than is reasonably necessary to remedy the conditions giving rise to the suspension.
- 14.2. Suspension of Work for Owner's Convenience. Upon seven (7) calendar days written notice to the Contractor, the Owner may at any time without breach of the Contract suspend all or any portion of the Work for a period of up to thirty days for its own convenience. The Owner will give the Contractor a written notice of suspension for convenience, which sets forth the number of suspension days for which the Work, or any portion of it, and the date on which the suspension of Work will cease. When such a suspension prevents the Contractor from completing the Work within the Contract Time, it is an Excusable Delay. A notice of suspension for convenience may be modified by the Owner at any time on seven (7) calendar days written notice to the Contractor. If the Owner suspends the Work for its convenience for more than 60 consecutive calendar days, the Contractor may elect to terminate the contract pursuant to the provisions of the contract.
- 14.3. Termination by Owner for Cause
- 14.3.1 The Owner may, without prejudice to any right or remedy, terminate the employment of the Contractor and take possession of the site and of all materials, equipment, tools, construction equipment and

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machinery thereon owned by the Contractor, under any of the following circumstances:

- 14.3.1.1 Persistent or repeated failure or refusal, except during complete or partial suspensions of work authorized under the Contract, to supply enough properly skilled workmen or proper materials; and/or
 - 14.3.1.2 Persistent disregard of laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, including the ODR; and/or
 - 14.3.1.3 Persistent failure to prosecute the work in accordance with the Contract, and to insure its completion within the time, or any approved extension thereof, specified in this Contract; and/or
 - 14.3.1.4 Failure to remedy defective work condemned by the ODR; and/or
 - 14.3.1.5 Failure to pay subcontractors, laborers, and material suppliers pursuant to Tex. Gov't Code Chapter 2251; and/or
 - 14.3.1.6 Persistent endangerment to the safety of labor or of the Work; and/or
 - 14.3.1.7 Failure to supply or maintain statutory bonds or to maintain required insurance, pursuant to the contract; and/or
 - 14.3.1.8 Any material breach of the Contract; and/or
 - 14.3.1.9 The Contractor's insolvency, bankruptcy, or demonstrated financial inability to perform the work.
- 14.4 Failure by the Owner to exercise the right to terminate in any instance is not a waiver of the right to do so in any other instance.
- 14.4.1 Should the Owner decide to terminate the employment of the Contractor under the provisions of Article 14.1.1, it will provide to the Contractor and its Surety thirty (30) days prior written notice.
 - 14.4.2 Should the Contractor or its Surety, after having received notice of termination, demonstrate to the satisfaction of the Owner, remedy to the condition(s) upon which the notice of termination was based, the notice of termination shall be rescinded in writing by the Owner. If so rescinded, the Work may continue without an extension of time.
 - 14.4.3 If the Contractor or its Surety fails to demonstrate remedy to the satisfaction of the Owner within thirty days following receipt of notice, the Owner may arrange for completion of the Work and deduct the cost of completion from the unpaid Contract Sum.
 - 14.4.3.1 This amount includes the cost of additional Owner costs such as AE services, other consultants, and contract administration.
 - 14.4.3.2 The Owner will make no further payment to the Contractor or its Surety until all costs of completing the Work are paid. If the

unpaid balance of the Contract Sum exceeds the costs of administering and finishing the Work, the Contractor will receive the excess funds. If such costs exceed the unpaid balance, the Contractor or its Surety will pay the difference to the Owner.

- 14.4.3.3 This obligation for payment survives the termination of the Contract.
- 14.4.3.4 The owner reserves the right in termination for cause to take assignment of all contracts between the Contractor and its Subcontractors, vendors and suppliers. The ODR will promptly notify the Contractor of the contracts the Owner elects to assume. Upon receipt of such notice, the Contractor shall promptly take all steps necessary to effect such assignment.
- 14.5 Termination for Convenience of Owner. The Owner reserves the right, without breach, to terminate the Contract prior to, or during the performance of the Work, for any reason. Upon such an occurrence, the following shall apply:
 - 14.5.1 The Owner will immediately notify the Contractor and the AE in writing, specifying the reason for and the effective date of contract termination. Such notice may also contain instructions necessary for the protection, storage or decommissioning of incomplete work or systems, and for safety.
 - 14.5.2 Upon receipt of the notice of termination, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due at that point in the Contract:
 - 14.5.4.1 Stop all work.
 - 14.5.4.2 Place no further subcontracts or orders for materials or services.
 - 14.5.4.3 Terminate all subcontracts.
 - 14.5.4.4 Cancel all materials and equipment orders as applicable.
 - 14.5.4.5 Take action that is necessary to protect and preserve all property related to this Contract which is in the possession of the Contractor.
 - 14.5.3 When the Contract is terminated for the Owner's convenience, the Contractor may recover from the Owner payment for all Work executed, including any additional work required pursuant to the notice of termination, and for any provable loss and reasonable expenses attributable to the Work resulting from such termination.
- 14.6 Termination By Contractor. If the Work is stopped for a period of ninety (90) days under an order of any court or other public authority having jurisdiction, or as a result of an act of government, such as a declaration of a national emergency making materials unavailable, through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing any of the Work under a contract with the

Contractor, then the Contractor may, upon thirty (30) additional days' written notice to the ODR, terminate the Contract and recover from the Owner payment for all Work executed and for any provable loss and reasonable expenses attributable to the Work resulting from such termination. If the cause of the work stoppage is removed prior to the end of the thirty (30) day notice period, the Contractor may not terminate the Contract.

- 14.7 Settlement on Termination. When the Contract is terminated for any reason, at any time prior to 180 days after the effective date of termination, the Contractor shall submit a final termination settlement proposal to the Owner based upon recoverable costs as provided under the contract. If the Contractor fails to submit the proposal within the time allowed, the Owner may determine the amount due to the Contractor because of the termination and pay the determined amount to the Contractor. -

Article 15. Dispute Resolution

- 15.1 Unresolved Contractor Disputes. The dispute resolution process provided for in Tex. Gov't Code, Chapter 2260, shall be used by the Owner and the Contractor to attempt to resolve any claim for breach of contract made by the Contractor, that is not resolved under procedures described throughout the Uniform General Conditions, Supplemental Conditions, or Special Conditions of the Contract.
- 15.2 Alternative Dispute Resolution Process. The Owner may establish a dispute resolution process to be utilized in advance of that outlined in Tex. Gov't Code, Chapter 2260.

Article 16. Miscellaneous

- 16.1. Supplemental and Special Conditions. When the Work contemplated by the Owner is of such a character that the foregoing Uniform General Conditions of the Contract cannot adequately cover necessary and additional contractual relationships, the Contract may include Supplemental and Special Conditions as described below:
- 16.1.1 Supplemental Conditions may describe the standard procedures and requirements of contract administration followed by a contracting agency of the State. Supplemental Conditions may expand upon matters covered by the Uniform General Conditions, where necessary, provided the expansion does not weaken the character or intent of the Uniform General Conditions. Supplemental Conditions are of such a character that it is to be anticipated that a contracting agency of the State will normally use the same, or similar, conditions to supplement each of its several projects.
- 16.1.2 Special Conditions shall relate to a particular project and be peculiar to that project but shall not weaken the character or intent of the Uniform General Conditions.
- 16.2. Federally Funded Projects. On Federally funded projects, the Owner may waive, suspend or modify any Article in these Uniform General Conditions which conflicts with any Federal statute, rule, regulation or procedure, where such waiver, suspension or modification is essential to receipt by the Owner of such Federal funds for the project. In the case of any project wholly financed by Federal funds, any standards required by the enabling Federal statute, or any Federal rules, regulations or procedures adopted pursuant thereto, shall be controlling.
- 16.3. Internet-based Project Management Systems. At its option, the Owner may administer its design and construction management through an Internet-based management system. In such cases, the Contractor shall conduct communication through this media and perform all project related functions utilizing this database system. This includes correspondence, submittals, requests for information, vouchers or payment requests and processing, amendment, change orders and other administrative activities.
- 16.3.1 Accessibility And Administration.
- 16.3.1.1 When used, the Owner will make the software accessible via the Internet to all project team members.
- 16.3.1.2 The Owner shall administer the software.
- 16.3.2 Training. When used, the Owner shall provide training to the project team members.

End of Uniform General Conditions – revised 5/4/06

SPECIAL CONDITIONS

These Special Conditions are in addition to the requirements of the Uniform General Conditions and the Supplementary General Conditions of the Contract and are a part of the Contract Documents.

1. **LAYING OUT BUILDING:** The General Contractor shall employ an experienced and competent Professional Civil Engineer or a Registered Professional Land Surveyor (RPLS) and cause him to establish at least three (3) separate permanent benchmarks, such benchmarks shall be established using two (2) of the permanent University benchmarks as identified by the University to which easy access may be had during the progress of the Work, and from time to time to determine and verify the lines and grades. As the Work progresses, establish easily accessible benchmarks at each level referenced to finish floor line.
 - a. The layout work shall be supervised by the Civil Engineer or RPLS and approved by the Architect/Engineer. At completion of the layout work, the Civil Engineer or RPLS shall submit a signed report to the Architect/Engineer stating that he is satisfied with the work and its accuracy.
 - b. The General Contractor shall erect and maintain substantial protection of all established layout controls for structures, set their location to provide proper working clearance and verify that they are level and at the proper grade.
 - c. As the Work progresses, the General Contractor shall lay out partitions on rough floors in exact locations as a guide to all contractors and trades.
 - d. Before ordering any materials or doing any work, each Contractor shall verify and be responsible for the correctness of all measurements. No extra charge or compensation will be allowed as a result of difference between actual dimensions and the measurements indicated on the drawings. Any differences, which may be found, shall be submitted to the Architect/Engineer for consideration before proceeding with the Work.
2. **LEVEL OR TRANSIT:** The General Contractor shall maintain an accurate level or transit at the site at all times. This instrument shall be used to verify lines, grades, etc., and shall be available at all times for use by the Architect/Engineer and the Owner. A surveyor's level or grade control lasers shall be used to lay out all work and shall be used by operators skilled in its use.
3. **CUTTING, PATCHING AND INSTALLATION OF SLEEVES:** The General Contractor shall coordinate and oversee all cutting and patching activities in the execution of the work and shall leave all chases, holes or openings straight, true and of proper size as may be necessary for the proper installation of his own or other contractor's or subcontractor's work, consulting with the superintendent and contractors or subcontractors concerned regarding proper location and size.
 - a. No excessive cutting will be permitted nor shall any piers or other structural members be cut without the written approval of the Architect/Engineer. After such work has been installed, the Contractor shall carefully fit around, close up, repair, patch, and point up as directed to the entire satisfaction of the Architect/Engineer and Owner.
 - b. All this work shall be done carefully with proper tools by personnel of the particular trade to which such work belongs, and shall be done without extra charge to the Owner. Each Contractor or Subcontractor will be required to build into his own work, as directed, any and all items furnished by others. Cutting and repairing of new work, in place, made necessary by negligence of another Contractor or Subcontractor or anyone employed by him, shall be paid for by the party, which is at fault.
 - c. The work of each section of the Specifications, unless otherwise specified, includes all cutting,

patching and digging for work in that trade section required for proper accommodations of work of other trades. Execute such work with competent personnel skilled in trade required for restoration. The Contractor and/or each Subcontractor shall arrange and pay for cutting and patching required for installation of its own work, as applicable.

- d. The Contractor shall ensure sleeves are provided for all service lines, including piping and conduit, covered in the Contract documents, which may pass through walls, roof or floors. Sleeves through floors shall extend 2" above finish Floor and cast into floor or sealed with heavy-duty sealant or fire stop material.
4. SANITARY FACILITIES: The General Contractor shall provide an adequate number of temporary sanitary facilities for the use of all persons employed on the job, and shall clean same at least weekly, or more often as deemed necessary by the Owner. He shall post notices, take such precautions as may be necessary, and remove refuse deposited in or about the buildings necessary to maintain the premises in a sanitary condition. Sanitary facilities shall be located away from public view to greatest extent possible. Neither the General Contractor nor any of the construction work forces shall be allowed to use campus sanitary facilities.
5. PROTECTION: Each Contractor shall protect, properly and effectively, all materials and equipment furnished by him during and after their installation. Building materials, Contractor's equipment, etc., may be stored on the premises, but the placing of same shall be within the construction fence. When any room in the building is used as a shop, storeroom, etc., the Contractor will be held responsible for any repairs, patching or cleaning arising from such use. The Contractor shall protect and be responsible for any damage to the work or material, from the date of the agreement until the final payment is made, and shall make good without cost to the Owner, any damage or loss that may occur during this period. The Contractor shall handle all material as directed, so that it may be inspected by the A/E's and the Owner's representative(s). All cement, lime, insulation, and other material affected by weather shall be covered and protected to keep them free from damage while they are being transported to or stored on the site.
- a. During the execution of the Work, open ends of all piping, conduit, and mechanical ducts as well as all openings in equipment shall be closed before leaving the Work at any time, to prevent the entrance of foreign matter.
 - b. All heating, ventilating, plumbing, and electrical equipment shall be protected during the execution of the Work.
 - c. All plumbing fixtures shall be protected and shall be boarded over so that they cannot be used by personnel or others. All drains shall be covered until placed in service to prevent the entrance of foreign matter.
6. SIGNS: No signs or advertisements will be allowed to be displayed without the approval of the Owner.
7. SITE SECURITY WATCHMAN AND JANITOR: The Contractor, at its own expense, and option may employ unarmed security personnel when deemed necessary to protect its Work, but must notify the Owner of any such security firms or employees. Campus police will not provide security for the Contractor's areas. The Contractor shall provide a person or persons for janitor work, who shall keep all offices clean, attend to the temporary toilet rooms and keep them clean and supplied, attend to drinking water and supplies. This person shall also help to keep the construction areas broomed, free from accumulated debris, and relatively clean.
8. ACCESS TO SITE AND PROTECTIONS: The Construction Documents shows the area of the building site which may be used by the Contractors. A fence shall be erected by the General Contractor around this gross area. The Contractor and Subcontractors shall confine their activities to this area and in no way obstruct any other part of the campus or utilize any campus facilities for any purpose.

- a. As soon as Work is begun at the site, the General Contractor shall build a substantial wire mesh fence at least six feet high as shown on the Construction Documents and completely surrounding the site. Posts shall be placed not more than eight (8) feet apart and set securely. Wire mesh shall be tightly stretched over the supports.
- b. Enclosure fences shall be provided with fire gates and gates for trucking in locations shown on Construction Documents, hung with heavy strap hinges, and provided with hasps for locking. Fences and gates shall be properly maintained throughout the duration of the job and removed on completion or when directed by the Architect/Engineer. Where directed by MSU representatives, contractor shall include campus padlocks for access required for service work within fence and/or fire protection of existing buildings.
- c. The trees and shrubs, within the work area assigned to the Contractor and endangered plants near access ways to the above, shall be protected by the Contractor with drip-line fencing and tree trunk wooden shields per University policy and as detailed on drawings, all maintained in sound condition. Contractor shall not remove, cut or trim any trees or shrubs in the Contract area before notifying the Owners and Architect/Engineer's representative and receiving approval.
- d. The Contractor shall be responsible for the protection of existing building surfaces, both interior and exterior, utilities, exterior structures, pavements, sidewalks, vegetation, irrigation systems, and component parts and equipment. Any damage to existing areas will be repaired at the responsibility of the Contractor with the approval of the Owner. Repairs not satisfactorily completed will be done by the Owner and deducted from the Contractor's contract amount.
- e. The Contractor is responsible for expenses incurred as the result of the loss of a security access card or key. As the result of the loss of a master key, an entire building will have to be re-keyed, with the expense charged to the Contractor.

9. PROJECT CLEANLINESS: It shall be the responsibility of the Contractor to see that the debris, trash, and dust residue resulting from building operations are removed from the building and the property in a timely manner. All installed equipment and ductwork shall be protected from accumulations of construction dust. When project work occurs in existing buildings, existing spaces, finishes and ductwork shall be properly sealed and protected from construction dust and damage. The Contractor shall provide personnel for janitorial work in order to keep all offices, office toilet rooms, and portable toilets cleaned; attend to drinking water and supplies. Solid debris, such as brick bats, mortar and plaster droppings, may not be dumped on the grounds about the building. All scrap from lumber, crating, excelsior, paper and similar types of trash are to be removed from the building site. Trash, construction debris, and mud shall not be allowed to accumulate anywhere on the project for periods of longer than one week, whether in the building, on the grounds, in the adjacent areas, or on the campus streets serving as delivery and haul-off routes for the work of this project. In other words, there must be thorough cleanup of the building and its surroundings no less often than once a week, and more often as may be directed by the Owner.

10. WATER FOR BUILDING WORK: The General Contractor shall provide temporary lines for all water required in the building Work and will arrange with the Owner's Utility Department for water service. The Contractor shall include all connections and means of conveying same to place where required, including the necessary metering devices capable of measuring water used by construction activity. In lieu of temporary connections, the Contractor may make permanent connections and this may serve for the construction period. In the event the Owner does not have water available at the site from the Owner's existing distribution system, the Contractor shall negotiate with the City for water and pay all fees and rates required by the City Water Department or shall provide an on site water well of sufficient production for construction.

11. ELECTRICAL ENERGY: The Contractor shall arrange with the local Utility Company for temporary

construction power with metering, whenever available. When using temporary power provided by the local utility company, the contractor is responsible for all costs, including electrical energy costs. If power is available only through the Owner's on-campus system, the Contractor shall arrange for and provide metering equipment capable of measuring power used by construction activities, if relevant to the project. The Contractor may energize the permanent power system in the building only when approved by the Owner. All costs of electrical energy provided through the University's power grid shall be paid by the University unless it is determined that the Contractor is not using the energy in a prudent and reasonable fashion in which case the Contractor shall be required to pay at the prevailing rate of the local Utility Company. When utilizing local Utility Company power, invoices must be submitted prior to payment reimbursement.

12. **TEMPORARY HEAT & LIGHTING:** If temporary heat is required for protection of the Work, the General Contractor shall provide Owner approved heating apparatus. Provide heat in such a manner that no Work will be damaged and ensure adequate ventilation exists. The Contractor shall provide adequate lighting about the site for security, inspections of excavations, night shift work should such occur, and shall also provide adequate temporary interior lighting throughout the building enclosure to facilitate quality workmanship and appropriate inspection visibility.

13. **TEMPORARY SERVICES:** If relevant to the project, and after equipment has been connected to the Central Utilities System, the Contractor may request that the utilities department open valves to put systems in service for heating or cooling. The Contractor is NOT to open or close any valves to utility systems. Proper system operation having been demonstrated to the University Utility Department, the Contractor may use the systems for heating and/or cooling once the thermal controls are operational.

During operation of the mechanical equipment, prior to Substantial Completion, the Contractor shall keep the mechanical equipment in good operating condition, properly flushed with chemical treatment systems properly started, properly maintained, including regular replacement, and/or cleaning of filters, both temporary and permanent. The guaranty period shall start on the date of official acceptance. Filters shall be changed at least every 2 weeks and more frequently if extremely dusty conditions exist.

14. **REMOVAL OF TEMPORARY FACILITY:** When a temporary facility is no longer needed for the proper conduct of the Work, the Contractor shall completely remove it from the Project and shall repair or replace any material, equipment or finished surface damaged in doing so.
15. **WARRANTIES AND GUARANTEES:** Pursuant to Article XIII of the Uniform General Conditions, additional warranty requirements and guarantees are described more fully in various sections of the technical specifications.
16. **PROJECT SIGN:** If applicable, the Contractor shall construct and erect one project sign on the project site in a location designated by the Owner. The sign shall make clear reference to the Midwestern State University System as well as Midwestern State University-. Submit a one-quarter scale shop drawing of the sign complete with all lettering to the Architect/Owner for approval before construction. The sign shall remain the property of the Contractor, and upon project completion, the Contractor shall remove the sign and remove from University property in a legal manner.
17. **PROJECT PLANNING AND SCHEDULING:** The Contractor shall participate with the Owner and A/E in a project-planning workshop promptly upon execution of the contract unless specified differently in the Contract document. Based on the project plan developed at that workshop, and within twenty-one (21) calendar days from Notice to Proceed, the Contractor shall submit its proposed Work Progress Schedule for the entire duration of the project to the Owner and A/E for review. The Schedule shall be coordinated with the Contract Price Breakdown, or Schedule of Values, and shall include all significant procurement, including long lead-time delivery items and approval activities, all work placement activities, including start and completion dates, identification of time periods for overhead inspections, pre-final and final inspections, system start-up and

commissioning, and punch-list corrections, as a minimum. The initial schedule submission shall coincide with the initial submittal of the Contract Price Breakdown and the two documents will be reviewed together. The Contractor shall revise the schedule as necessary to obtain acceptance by the Owner and A/E to establish a Baseline Schedule for the project. Once the Baseline Schedule is accepted, the Contractor shall update the schedule monthly, as a minimum, to record actual progress of activity start and completion and remaining durations and shall provide updated reports monthly to the Owner and A/E in association with each request for progress payment. The format and content of monthly update reporting shall be as determined at the project-planning workshop unless specified otherwise in the contract documents. The Contractor shall include a separate line item in its Contract Price Breakdown for planning and scheduling, to include development of the accepted Baseline Schedule and all updates and reporting.

18. **CLARIFICATION OF INSURANCE REQUIREMENTS:** Refer to the Uniform General Conditions and Supplementary General Conditions, paragraph 5.2. When the project involves work in an existing structure, the scope of this Builder's Risk Insurance is to cover any portion of an existing building which is in the Contractor's care, custody or control (which may be necessary to do Work in another portion of the building), over and above the normal limitations imposed by paragraph 5.2. Paragraph 5.2 is not intended to increase the dollar amount of the Insurance, which is stipulated in paragraph 5.2 to be 100% of the value of the Work, but only to increase the scope of what is to be covered.
19. **PREVAILING WAGE RATE DETERMINATION:** Pursuant to the Uniform General Conditions/Supplementary General Conditions, the following schedule indicates the prevailing wage rate determination determined by the Owner.

See Attachment "B" Prevailing Rate Schedule.

20. **ONGOING CAMPUS/OWNER OPERATIONS:** This project is surrounded by continuously functioning campus facilities, including student housing, academic and research efforts. The Contractor shall make every effort to avoid disruptions to ongoing campus activities and to maintain a safe environment for students, faculty, and staff in the areas adjacent to the project. Campus utilities must not be interrupted except when scheduled and approved in advance through Owner-designated established channels. The Contractor or his personnel shall NOT open or close any valves of the central campus utilities. Valve operation is to be done by University utilities personnel only. The Contractor shall not activate or de-activate any campus utility system, or component of any such system, without express written direction from the Owner.

The facilities will only be available during the scheduled construction time-period as specified by the Owner, typically from 8:00 am until 6:00 pm Monday through Friday. Work during other times, including weekends, shall only be allowed with prior request and written authorization from the Owner. In addition, the Contractor shall accommodate and coordinate its construction work force and activities to allow the Owner's forces and Owner's separate subcontractors (i.e. telephone, data, IT, computer, and furniture installation) to enter the jobsite to perform their work.

21. **CONTRACTOR PARKING:** Parking is either within the Contractor's fenced area, or off campus at the Contractor's expense. There will be no parking outside of fenced area adjacent to the site or on public streets on campus for any of the contractor's work force unless specifically approved by the Owner.

A limited number of remote parking spaces may be provided near the campus. Such parking will be available at no cost to the Contractor or the workers but will require permits, issued by the campus police department, for all vehicles and transportation furnished by the Contractor. Such remote parking is provided for the convenience of the Contractor with the understanding that the Contractor is responsible for all workers and all workers' vehicles while they are on the campus.

22. **RESPONSIBILITY FOR WORK FORCE:** A superintendent shall be on site at all times while work is

in progress. The Contractor is responsible for the actions of its entire work force, including Subcontractor's and supplier's employees, whenever they are on the campus. The Contractor shall submit their plan for identifying and controlling all workers, and for management of personnel records, including payroll records. Identification badges for workers, busing of workers from remote parking lot(s), frequent written and verbal reminders to work force of appropriate behavior and avoidance of campus facilities, and publishing of established access and egress routes for vehicular and pedestrian traffic are required, as a minimum, in order to maintain control of the work force.

a. Unacceptable behavior on the part of the workers anywhere on campus, including parking lots, the project site, and the accessing route(s) through the site through the campus, or failure to obtain parking permits, or traffic violations while on campus may lead to cancellation of the Contractor's on-campus parking privileges. Further, identifiable offending worker(s) will be removed from the project.

b. Harassment of any person, whether student, faculty, staff, or visitor to the campus, is forbidden. Harassment includes any action such as jeering, whistling, calling-out, staring, snickering, making rude or questionable comments, or similar behavior. If identifiable, any offending worker(s) will be removed from the project.

23. SITE ACCESS AND CONTROL: All campus roads, drives and fire lanes as well as all sidewalks and pedestrian routes, other than those specifically indicated to be in the contractor's area of control, must be kept open at all times. The Contractor shall make advance preparations for, and obtain security clearance for, all significant material deliveries and truck traffic, cranes, concrete trucks, etc., through the campus to the project site. Contractor shall provide all traffic controls, warning signs, barricades, and flagmen during all construction traffic operations that affect roadways and pedestrian walkways with plans for same that are acceptable to the Owner.

24. NOISE CONTROL: Equipment locations and timing or sequence of work operations shall be coordinated so as not to inordinately conflict with the Owner's continuing use of the existing or adjacent buildings, and/or minimally interfere with scheduled meetings or events or on-going operations.

25. SMOKING: Smoking is not allowed inside any campus building or anywhere on campus except in designated areas. Smoking will not be allowed in any enclosed area of the building(s) of this project. Enclosed, as used here, refers to erection of exterior walls and overhead structure for any portion of the project; it does not mean to indicate a state of building "dry-in". Use or possession of illegal drugs or alcohol on the project site or anywhere on campus is forbidden.

26. SITE AND AREA MAINTENANCE: The Contractor shall erect erosion control at the perimeter of the site and otherwise control migration of construction debris and dirt to campus and public areas adjacent the project site. The Contractor shall keep all roadways in the vicinity of the project clear of mud, dirt, debris, and construction materials. The Contractor will be required to clean campus streets utilized as truck routes for the project if mud or debris is allowed to remain in the roadways. If such roadways, parking lots or site improvements are damaged by the work of this project, the Contractor will be required to repair them in kind to a quality acceptable to the Owner.

27. GENERAL PERMITS: The Owner is exempt from paying for permits and fees to local government entities related to work on the Owner's property. There will be no building permit required, no platting fees and no local government inspection fees for permanent work on the Owner's property. The Owner is not exempt from permit and fee requirements for work in public rights of way or outside the boundaries of the Owner's property. The Contractor shall secure, pay and maintain all required permits.

28. SEDIMENTATION AND EROSION CONTROLS/NPDES GENERAL PERMIT: The National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Construction Sites (General Permit) issued by the United States Environmental Protection Agency

(EPA) requires compliance for construction activities resulting in the disturbance of five (5) acres or more or if a construction site is part of a common plan of development of five (5) acres or more. The Owner's property is comprised of an overall total of approximately 473 acres of which this project covers a part; therefore, compliance with the NPDES General Permit is required.

- a. Indemnification. GENERAL CONTRACTOR HEREBY INDEMNIFIES AND HOLDS HARMLESS OWNER FROM ANY AND ALL LIABILITY, LOSS, DAMAGE, COST, AND EXPENSE ARISING OUT OF A VIOLATION OF THE APPLICABLE EPA NPDES REGULATIONS, THIS SPECIAL CONDITIONS SECTION, OR THE TERMS AND CONDITIONS OF THE GENERAL PERMIT TO THE EXTENT ATTRIBUTABLE TO AN ACT OR OMISSION OF GENERAL CONTRACTOR, ITS SUBCONTRACTORS AT ANY TIER, OR CONSULTANTS.

29. ENVIRONMENTAL PROTECTION PROCEDURES: Any existing trees and shrubs within the Project Site assigned to the contractor and any endangered plants near access ways to the Project Site, shall be protected by the Contractor as detailed in the Drawings, or maintained in sound condition until permission is given for their removal. Contractor shall not remove, cut or trim any trees or shrubs in the Project Site before notifying the Owner's representative and receiving his prior approval. Any vegetation damaged during construction shall be replaced in kind. The Contractor shall be responsible for repair of all damage to areas of the Project site used for construction storage purposes. Repair shall consist of replacing trees, vegetation, grasses in kind with watering and maintenance as required for establishment unless otherwise noted on the Drawings.

The Contractor is solely responsible for cleaning up and properly disposing of all spilled pollutants brought to the site as part of the Contractor's work, including oil, paint, fuels, antifreeze, solvents, etc. in accordance with applicable laws and regulations. Contractor must keep accurate records (such as receipts, copies of analytical results, etc.), indicating proper cleanup and disposal of spilled materials in accordance with applicable laws and regulations. Furthermore, Contractor is responsible for ensuring that all discharges from the site are in compliance with all applicable laws and regulations. Contractor is responsible for pollutant contaminated run-off and proper disposal of all waste materials generated as a result of work activities.

Chemical cleaning of new utility additions shall be done by circulating a good non-phosphate cleaner through as much of the new system as possible. Prior to dumping the cleaning agent, notify the City of Industrial Water Treatment Department to sample the effluent. If the City of approves dumping to drain, then dump to the sanitary sewer. Refill the system with water, circulate and again have the City of Industrial Waste Water Treatment Department to sample prior to dumping. If at any stage the City of refuses to accept the effluent, the Contractor must make special arrangements for the legal disposal of the effluent and give the owner a copy of the shipping and disposal manifests.

30. CONTRACTOR OCCUPANCY AND LIMITS OF CONSTRUCTION: The Contractor and all his personnel, his assigns, materialmen, suppliers and subcontractors shall confine and limit their work and use of the Project Site to those areas within the defined Project Site limits of construction. All areas beyond these limits are patrolled by the City of Police Department and The MSU Midwestern State University- Campus Police Department personnel. All public and University rules, laws and requirement shall be obeyed. No tools, construction vehicles, or construction material shall be permitted beyond the Project Site limits of construction. The Contractor shall confine his personnel within the Project Site limits of construction. Loitering of construction personnel beyond the fenced limits of construction or around the Project Site construction entry gates shall be discouraged.
31. RECORD DOCUMENTS: The Contractor shall provide the Owner, at between one month and three months prior to Substantial Completion, with a complete set of the as-built Telecommunication Drawings and Telecommunication Port Log for the Owner's use in coordinating selection and procurement of telephone/data equipment.

As a requirement for acceptance of Substantial Completion, the Contractor shall reproduce two (2) copies of the current As-Built Drawings and Specifications maintained at the job site and provide these copies to the Owner. These documents shall be labeled "Interim Record Drawings and Specifications", and are required to assist the Owner in the operation of the facility until Final Completion is accomplished and the final As-Built Drawings and Specifications are provided to the Project Architect/Engineer to prepare the final "Record Drawings" and "Record Specifications". Three (3) weeks before substantial completion acceptance of the project, the contractor shall have submitted a draft copy of the Owner's operating and maintenance manuals. Two (2) copies of the final owners operating and maintenance manuals shall be delivered within 30 days of substantial completion and include copies of ALL approved shop drawings and submittal; list of ALL subcontractors and vendors including names, addresses, phone numbers; warranty and guarantee documents, etc.

32. CHANGE ORDER PRICING: Article XII, Sec, 11.3.4 of General add the following:

The total cost of all labor and materials, including supervision up to the level of Project Superintendent, itemized to show man-hours by trade and classification, unburdened hourly rates, and total labor cost. Man-hour totals, labor rates, and materials shall be based on reasonable and prevailing area labor rates and materials costs.

33. FIELD MANAGEMENT AND TEMPORARY STRUCTURES:

- a. The Contractor shall coordinate and direct the work of this project from the site or Owner-designated area at adjacent site for the duration of the Work. One or more of the following options applies to this Project **only if designated by a checked box**:

The Owner will designate and provide an adequately sized enclosed area for field office operations to the General Contractor adjacent the Project site. This location is to be properly maintained and released back to the owner in its original condition.



The Contractor shall provide and maintain its own temporary field office(s) that is weather-tight, well-lighted, air conditioned and safely heated, and to include provisions for telephone, data, and facsimile services, conference area(s), including tables and chairs, toilet facilities, and maintenance of all project files including submittals, project correspondence, and payment and payroll records, etc. The University will assist in providing hook-ups for telephone, data, and facsimile services when project is within campus grid. A lockable, 12' x 12' minimum private office shall be provided for the use of the Owner and A/E, equipped with an operational telephone, a fax machine and computer connections.

The Contractor shall provide and maintain a conference area, which shall include at least one primary area suitable for up to fifteen (15) persons to participate in progress and coordination meetings. The walls of this conference area are to serve as display surfaces for maintaining current prints of project schedules and work placement plans. This space can be incorporated with the Contractor's office trailers, and will be for shared and joint use by both throughout the project duration.

The Contractor shall provide and maintain at the site for the duration of the Project, for the use of the Owner and its consultants, including the Architect/Engineer, a separate field office structure which is adequately weather-tight, well-lighted, air conditioned and safely heated, adequately supported and anchored, with toilet facilities, and two long distance phone/fax lines. Local calls made from these lines shall be paid by the General Contractor. Long distance calls shall be paid for by the person or party placing the calls. The telephone numbers shall be reported to the Owner and the Architect/Engineer as soon as the telephones are installed.

Such field office shall be a minimum of twelve (12) feet wide by about thirty- (30) feet long and shall be partitioned to provide for two separate work areas including two entry doors with keyed locks, and shall include toilet facilities. Each of the three "office" areas within this structure shall be provided with layout tables, plan storage, file cabinets, desk and chairs, one telephone and outlet and one fax and one data outlet, as well as adequate convenience outlets to accommodate business machines.

Telephone service to this field office shall include one phone line capable of local and long distance service with voice mail and one fax and one data line, for a total of three separate lines, each with individual phone numbers and each line to be connected to multiple outlets for convenient arrangement. All costs for providing this telephone service, including a phone unit in each separate area, shall be paid by the Contractor.

- b. The General Contractor shall arrange for each Subcontractor to have field office accommodations as necessary to perform their work adequately.
- c. The General Contractor shall provide adequate and safe entries to all field offices, including steps with railings and landings or stoops as required, and shall provide hard surface walkways to connect the field office structures to one another and to site entry or exit.
- d. Upon authorization to mobilize, the General Contractor shall submit a plan layout showing location of field offices, size and arrangement of spaces and outlets, fencing, site control points, and utility tie-in locations for Owner review and acceptance.
- e. All costs for temporary field offices shall be included in the Contractor's Contract Price Breakdown. Reimbursement of such costs shall be included in the regular Progress Payment on a monthly basis, pro-rated over the anticipated duration of the project.

34. TEMPORARY EQUIPMENT:

- a. The General Contractor shall provide all scaffolding necessary for the performance of the Work. All scaffolding shall be so constructed, anchored, and braced as to comply in all respects with OSHA guidelines to afford safety and protection to both craftsmen and their Work, inspectors, and to the Work of other contractors.
- b. The General Contractor and its Subcontractors shall provide on the premises at locations approved by the Owner, suitable substantial watertight storage sheds for the storage of tools and all materials which would be damaged by the weather; shall maintain same in good condition and shall remove same when directed. All storage sheds shall be of sufficient size to hold the materials required and shall have floors raised at least 6" above the ground on heavy joists.
- c. Except as otherwise specified, the Contractor shall furnish at its own cost and risk, all significant tools, apparatus, hoists or cranes, derricks, etc.
- d. Temporary equipment shall be installed in such a manner that finish work will not be damaged by smoke, falling mortar, concrete or other causes. Location and arrangement of temporary equipment shall be subject to the approval of the Construction Inspector.
- e. All temporary shoring required for the installation of Work shall be included in this Contract and the General Contractor must assume all responsibility for this Work and make good any damage caused by improper supports or failure of shoring in any respect.

35. SAFETY:

- a. The Contractor shall provide barricades, warning signs and lights. Comply with recognized standards and code requirements for the erection of substantial barricades where needed to

prevent accidents and any unsafe condition from developing during the construction period.

- b. The Contractor shall review fire prevention and protection needs with the Owner's personnel in procedures and post warnings and information. Maintain unobstructed access to fire extinguishers, temporary fire protection facilities, stairways and other access routes. Provide supervision of welding operations, combustion type temporary heating units, and similar sources of ignition.
- c. The Contractor shall be responsible for initiating, maintaining, and supervising safety precautions and programs associated with the work. It shall be the duty and responsibility of the Contractor to comply with all pertinent sections of the Occupational Safety and Health Act and all amendments thereof. The Contractor shall do all things necessary and provide all equipment and labor necessary to protect students, staff, faculty, and the general public from dangers associated with the work. Walkways, parking areas, and other areas surrounding the job site will be in use and given priority. The University shall not be held responsible for failure of the Contractor to perform the job in a safe manner.

36. HAZARDOUS MATERIALS: For information only, an asbestos report has or has not been filed on the portion of the existing building involved in the project and a positive or negative result was reported. See abatement requirements, if relevant, elsewhere in the Construction Documents. In the event the Contractor encounters material, which he reasonably believed to be asbestos, which has not been abated, the Contractor shall immediately stop work in the area affected and report the condition to the Owner. If in fact the material is asbestos and has not been abated, the Contractor shall not resume the non-asbestos-related work in the affected area until the asbestos has been abated. The abatement action may be done in any of three ways, as the Owner may decide. The Owner may perform the abatement by its own forces, or the Owner may contract with a third party to perform the abatement, or the Contractor may perform the abatement by an appropriate means acceptable to the Owner such as performing the work through its own employees if they are appropriately certified or hiring an abatement subcontractor. If the Contractor is to perform the abatement, the Owner and the Contractor will negotiate a change order in accordance with the contract terms relative to extra work. In such a case, the Owner specifically agrees that the cost of any special comprehensive general liability insurance that may be required relative to the abatement work will be considered a direct cost of the extra work, on which like the other direct costs the Contractor will be allowed to add a percentage of 5% or 15%.

---End of Special Conditions---

DOCUMENT 00 73 43 - WAGE RATE REQUIREMENTS

PART 1 - GENERAL

1.01 WAGE RATE REQUIREMENTS

- A. Pursuant to the Wage Scale adopted by the Owner, Contractors and subcontractors involved in the construction of this Project shall pay their laborers and mechanics employed under the Contract at least the locally prevailing wages (including fringe benefits) listed in the wage determination in the contract, for the work performed. Labor standards clauses shall be included in covered contracts.
- B. Prevailing wages, including fringe benefits, shall be paid on all hours worked on the site of the work.
 - 1. Apprentices or trainees may be employed at less than the rates listed in the Contract wage determination only when they are in an apprenticeship program registered with the Department of Labor or with a state apprenticeship agency recognized by the Department.
- C. For prime contracts in excess of \$100,000, the Contractor and each subcontractor shall also, under the provisions of the Contract Work Hours and Safety Standards Act, pay laborers and mechanics employed in the performance of the contracts one and one-half times their basic rate of pay for all hours worked over 40 in a workweek. The overtime provisions of the Fair Labor Standards Act may also apply to DBA-covered contracts.
- D. Nothing contained herein, however, shall be construed to prohibit the payment of more than the prevailing rate of wages to any laborer, workman, or mechanic employed on the work.

1.02 DEFINITIONS

- A. The "prevailing wage" is the combination of the basic hourly rate and any fringe benefits listed in a wage determination.

1.03 POSTING WAGE RATES

- A. Post applicable wage determination on job site in a prominent and accessible place where they can be easily seen by the workers.

1.04 EMPLOYEE CLAIMS

- A. Any employee who alleges that he has not been paid the minimum wage rate may file a written claim with the Owner.

1.05 PAYMENT OF EMPLOYEES AND PAYROLL RECORDS

- A. The Contractor and each subcontractor shall pay covered workers weekly and submit weekly certified payroll records to the Owner.

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- B. Payment may be entirely as cash wages or by a combination of cash wages and employer-provided bona fide fringe benefits. If payment is by cash, obtain the signature of the employee verifying the payroll period, total hours worked, rate per hour, total wages earned and the date received.
- C. The Contractor and each subcontractor engaged at the site of the work shall prepare and maintain weekly payroll reports certified to be correct.
 - 1. Payroll records shall contain the name, social security number, classification, prevailing wage rate including fringe benefits per hour, hours worked each day, including regular hours and overtime hours.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 WAGE RATE SCHEDULE

- A. See attached Prevailing Wage Rate Determination.

END OF DOCUMENT 00 73 43

PREVAILING WAGE RATE DETERMINATION

Midwestern State University has adopted the following Wage Scale indicating the wages to be paid for Journeyman including all fringe benefits. This Wage shall be paid to all the workers on the site of the Project. It does not apply to trades off the site of the actual construction project.

BUILDING CONSTRUCTION TRADES

WAGE RATE

CLASSIFICATION

Asbestos Workers, Insulators	\$11.05
Bricklayers, Stone Masons	\$15.75
Carpenters	\$12.50
Carpet Layers/Floor Installers	\$11.00
Concrete Finishers	\$12.25
Drywall Installers/Ceiling	\$12.08
Electricians	\$16.75
Elevator Mechanics	\$18.75
Fire Alarm Technicians	\$12.50
Light Equipment Operators	\$10.50
Heavy Equipment Operators	\$13.00
Glaziers	\$11.50
Ironworkers	\$13.60
Laborers	\$ 8.00
Lathers	\$15.25
Millwrights	\$15.29
Painters, Wall Covering	\$11.50
Pipe fitters	\$17.75
Plasterers	\$15.10
Plumbers	\$17.79
Reinforcing Steel Setters	\$10.50
Roofers	\$10.50
Sheet Metal Workers	\$17.55
Sprinkler Fitters	\$17.25
Terrazzo Workers	\$15.00
Tile Setters	\$15.00
Waterproofers/Caulkers	\$11.50

CIVIL/HEAVY CONSTRUCTION TRADES

DECSRIPTION

Air Tool Person	\$ 7.25
Asphalt Raker	\$ 7.50
Batching Plant Scaleperson	\$ 7.00
Concrete Finisher (Paving)	\$ 7.60
Concrete Finisher (Structures)	\$ 7.60
Form Builder (Structures)	\$ 9.50
Form Setter (Paving and Curbs)	\$ 9.00
Form Setter (Structures)	\$ 9.00
Mechanic	\$ 7.50
Oiler	\$ 7.00
Serviceperson	\$ 7.00
Pipelayer	\$ 8.25
Welder	\$13.90

POWER EQUIPMENT OPERATORS

Asphalt Paving Machine	\$ 9.00
Broom or Sweeper Operator	\$ 7.00
Bulldozer, 150HP or less	\$ 8.00
Crane, Clamshell, Shovel (less than 1-1/2 c.y.)	\$ 8.00
Crane, Clamshell, Shovel, Backhoe Derrick, Dragline, Shovel (1-1/2 c.y.)	\$ 8.25
Crusher and Screening Plant Operator	\$ 7.00
Foundation Drill Operator (truck)	\$ 8.50
Front End Loader (2-1/2 c.y.)	\$ 7.25
Motor Grade Operator, Fine grade	\$10.00
Motor Grader Operator Flat Wheel or Tamping	\$ 7.00
Roller, Steel Wheel (Plant-Mix Pavements)	\$ 7.25
Roller, Steel Wheel (Flat Wheel or Tamping)	\$ 7.25
Roller, Pneumatic (Self-Propelled)	\$ 7.25
Scrapers (17 c.y. or less)	\$ 7.25
Scrapers (over 17 c.y.)	\$ 7.50
Tractor (Crawler Type over 150HP)	\$ 7.00
Tractor (Pneumatic 80HP and less)	\$ 7.00
Traveling Mixer	\$ 7.00
Wagon Drill, Boring Machine/Post Hole Digger	\$ 7.00
Truck Driver	\$ 7.75
Cable Splicer	\$ 9.00
Lineperson	\$10.75
Groundperson	\$ 7.00

SECTION 01 1000-SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Project information.
 - 2. Work covered by Contract Documents.
 - 3. Work by Owner.
 - 4. Work under separate contracts.
 - 5. Owner-furnished products.
 - 6. Access to site.
 - 7. Coordination with occupants.
 - 8. Specification and drawing conventions.

1.3 PROJECT INFORMATION

- A. Project Identification: New Residence Hall – Site Improvements – BP 01.
 - 1. Project Location: 3410 Taft Blvd, Wichita Falls, TX 76308
- B. Owner: Midwestern State University.
 - 1. Owner's Representative: Kyle Owen, Project Manager, 940.397.4648..
- C. Architect: Treanor Architects, 1700 Pacific Ave., Suite 2630, Dallas, TX 75201; 214.310.1018.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following site improvements:
 - 1. Landscape turf, grasses, plants, shrubs, trees, and associated details.
- B. Type of Contract:
 - 1. Project will be constructed under a single prime contract.

1.5 WORK BY OWNER

- A. General: Cooperate fully with Owner so work may be carried out smoothly, without interfering with or delaying work under this Contract or work by Owner. Coordinate the Work of this Contract with work performed by Owner.
- B. Concurrent Work: Owner will perform the following construction operations at Project site. Those operations will be conducted simultaneously with work under this Contract.
 - 1. Owner will be preparing residence hall for occupancy August 1st, 2016. Preparations include but are not limited to the following:
 - a. Furniture delivery.
 - b. Final cleaning.
 - c. Testing of systems.
 - d. Staff Training.

1.6 WORK UNDER SEPARATE CONTRACTS

- A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under separate contracts.
- B. Concurrent Work: Owner has awarded separate contract(s) for the following construction operations at Project site. Those operations will be conducted simultaneously with work under this Contract.
 - 1. Student Housing Expansion Project: To Buford-Thompson Company for the construction of a new, 5-story, 153,000 SF residence hall.
 - 2. Contractor to coordinate use of site with building contractor.
 - 3. Site Improvements – Bid Package 01: Including but not limited to concrete sidewalks, site amenities such as study bars, garden walls, fire pit, and sand volleyball court.

1.7 OWNER-FURNISHED PRODUCTS

- A. Owner will furnish products indicated. The Work includes receiving, unloading, handling, storing, protecting, and installing Owner-furnished products.
- B. Owner-Furnished Products:
 - 1. Site Furniture.

1.8 ACCESS TO SITE

- A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.

1.9 COORDINATION WITH OCCUPANTS

- A. Full Owner Occupancy: Owner will occupy site and adjacent building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
 2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.

1.10 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.
 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 1000

SECTION 01 25 00 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
 - 1. Division 01 Section "Alternates" for products selected under an alternate.
 - 2. Division 01 Section "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.
 - 3. Divisions 02 through 49 Sections for specific requirements and limitations on substitutions.

1.03 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
 - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
 - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.04 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Use form provided in Project Manual.
 - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.

- g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.05 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.06 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.01 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
 - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Requested substitution provides sustainable design characteristics that specified product provided.
 - c. Substitution request is fully documented and properly submitted.
 - d. Requested substitution will not adversely affect Contractor's construction schedule.

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- e. Requested substitution has received necessary approvals or authorities having jurisdiction.
- f. Requested substitution is compatible with other portions of the Work.
- g. Requested substitution has been coordinated with other portions of the Work.
- h. Requested substitution provides specified warranty.
- i. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Not allowed.

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 25 00

SECTION 01 25 00 – SUBSTITUTION FORM
CONSTRUCTION STANDARDS

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01 25 00

SUBSTITUTION FORM

PART 1: GENERAL

1.01 SUBSTITUTION FORM

A. The following form shall be used for product substitutions:

TO: ARCHITECT OF RECORD
OR
MIDWESTERN STATE UNIVERSITY PROJECT REPRESENTATIVE

PROJECT:

SPECIFIED ITEM:

Section _____ Paragraph _____ Description _____

The undersigned requests consideration of the following:

PROPOSED SUBSTITUTION _____

Upon submitting this Request for Substitution, the undersigned certifies that the following paragraphs are correct, unless otherwise modified on attachments:

1. Contractor has investigated the proposed substitution and believes that it is equal to or superior in all respects to specified item, and will conform to design requirements and artistic effect
2. Cost saving to Owner for accepting substitution: None ___
\$ _____
3. Contractor will pay the Architect and/or Engineers for additional studies, investigations, submittal reviews, redesign and/or analysis caused by the requested substitution and at no additional cost to Owner.
4. Substitution requires dimensional changes or redesign of structure or M & E Work No ___ Yes ___ (If yes, attach complete data).
5. Contractor will waive future claims for added cost to Contract caused by substitution.
6. Changes in contract time caused by substitution: No ___ Yes ___ Add/Deduct ___ days.
7. Adverse affect on other Trades caused by substitution: No ___ Yes ___ (If yes, explain on attachment).

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CONSTRUCTION STANDARDS

8. Contractor will modify other parts of the Work as may be required to make all parts of Work complete and functioning. Yes ___ (Explain on attached page if necessary)
9. Same type of warranty for specified product will be furnished for proposed substitution: Yes ___ No ___
10. Maintenance Service Available: Yes ___ No ___
Where? _____
11. Contractor has complied with requirements of the Midwestern State University's Design Guidelines and Construction Standards and Contract Documents as part of request for substitution, and has completely filled-in this form.

REASON FOR NOT GIVING PRIORITY TO SPECIFIED ITEM:
See attached ___ Not required ___

Submitted by:

Signature _____

Firm _____

Address _____

Date _____

Telephone _____

For Use by Architect:

___ Approved

___ Approved as noted

___ Rejected

Rejected only for conformance with
Design Concept of Project and with
Information in Contract Documents.

Signature _____

Date _____

REQUIRED ATTACHMENTS:

- A. Product Data for Specified Item: Clearly marked to indicate full compliance with specification section and Contract Documents: Attached
- B. Product Data for Substitution: Clearly marked for adequate evaluation and comparison with data submitted for specified item: Attached ___
- C. Samples: Attached ___ Not Required ___
- D. Cost Data and Implications of Substitution: Attached ___ Not required ___
- E. Contractor's Comments: Attached ___ Not required ___
- F. Manufacturers certifications on asbestos and PCB: Required/must be attached
- G. Other: _____

PART 2: PRODUCTS (NOT USED)

PART 3: EXECUTION (NOT USED)

END OF SECTION 01 25 00

SECTION 01 26 00 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Requirements:
 - 1. Division 01 Section "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.

1.03 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Form G710-1992 Architect's Supplemental Instructions or equivalent.

1.04 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within time specified in Proposal Request or 20 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - e. Quotation Form: Use CSI Form 13.6D, "Proposal Worksheet Summary," and Form 13.6C, "Proposal Worksheet Detail."
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.
 - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.

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2. include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Division 01 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
7. Proposal Request Form: Use CSI Form 13.6A, "Change Order Request (Proposal)," with attachments CSI Form 13.6D, "Proposal Worksheet Summary," and Form 13.6C, "Proposal Worksheet Detail."

1.05 ADMINISTRATIVE CHANGE ORDERS

- A. Allowance Adjustment: See Division 01 Section "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.

1.06 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Changes Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Form G-701-2001 Change Order or equivalent .

1.07 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Form G714-2007 Construction Change Directive or equivalent . Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 26 00

SECTION 01 29 00 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
 - 1. Division 01 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
 - 2. Division 01 Section "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

1.03 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.04 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
 - 1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:
 - a. Application for Payment forms with continuation sheets.
 - b. Submittal schedule.
 - c. Items required to be indicated as separate activities in Contractor's construction schedule.
 - 2. Submit the schedule of values to Architect at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
 - 3. Subschedules for Separate Elements of Work: Where the Contractor's construction schedule defines separate elements of the Work, provide subschedules showing values coordinated with each element.
 - 4. Subschedules for Separate Design Contracts: Where the Owner has retained design professionals under separate contracts who will each provide certification of payment requests, provide subschedules showing values coordinated with the scope of each design services contract as described in Division 01 Section "Summary."
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Architect's project number.
 - d. Contractor's name and address.

- e. Date of submittal.
- 2. Arrange schedule of values consistent with format of AIA Document G703.
- 3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
- 4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
- 5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. If required, include evidence of insurance.
- 6. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
- 7. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate owner payments or deposits, if any, and balance to be paid by Contractor.
- 8. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
- 9. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.05 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
 - 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
- C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
 - 1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 - 2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
 - 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
 - 4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.
- E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent or surety to payment, for stored materials.
 2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
 3. Provide summary documentation for stored materials indicating the following:
 - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
 - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
 - c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.
- F. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit conditional final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.
- H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of values.
 3. Contractor's construction schedule (preliminary if not final).
 4. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor.
 5. Products list (preliminary if not final).
 6. Schedule of unit prices.
 7. Submittal schedule (preliminary if not final).
 8. List of Contractor's staff assignments.
 9. List of Contractor's principal consultants.
 10. Copies of building permits.
 11. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 12. Initial progress report.
 13. Report of preconstruction conference.
 14. Certificates of insurance and insurance policies.
 15. Performance and payment bonds.
 16. Data needed to acquire Owner's insurance.
- I. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.

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2. This application shall reflect Certificate(s) or Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
 5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
 6. AIA Document G707, "Consent of Surety to Final Payment."
 7. Evidence that claims have been settled.
 8. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 29 00

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Coordination drawings.
 - 3. Requests for Information (RFIs).
 - 4. Project meetings.
- B. Related Requirements:
 - 1. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
 - 2. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 - 3. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.03 DEFINITIONS

- A. RFI: Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.04 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Use CSI Form 1.5A. Include the following information in tabular form:
 - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Drawing number and detail references, as appropriate, covered by subcontract.
- B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
 - 1. Post copies of list in project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.05 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate

construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's construction schedule.
 2. Preparation of the schedule of values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Preinstallation conferences.
 7. Project closeout activities.
 8. Startup and adjustment of systems.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

1.06 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
 - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
 - b. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - c. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
 - d. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
 - e. Indicate required installation sequences.
 - f. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance

requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

- B. Coordination Drawing Organization: Organize coordination drawings as follows:
1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
 2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
 3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
 4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
 5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
 6. Mechanical and Plumbing Work: Show the following:
 - a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
 - b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
 - c. Fire-rated enclosures around ductwork.
 7. Electrical Work: Show the following:
 - a. Runs of vertical and horizontal conduit 1-1/4 inches in diameter and larger.
 - b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire-alarm locations.
 - c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
 - d. Location of pull boxes and junction boxes, dimensioned from column center lines.
 8. Fire-Protection System: Show the following:
 - a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
 9. Review: Architect will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Architect determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, Architect will so inform Contractor, who shall make changes as directed and resubmit.
 10. Coordination Drawing Prints: Prepare coordination drawing prints according to requirements in Division 01 Section "Submittal Procedures."
- C. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:
1. Architect will furnish Contractor one set of digital data files of the Contract Drawings for use in preparing coordination digital data files.
 - a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
 - b. Digital Data Software Program: Drawings are available in **AutoCAD Version 2013**.
 - c. Contractor shall execute a data licensing agreement in the form of agreement included in Project Manual .
 2. File Preparation Format: Same digital data software program, version, and operating system as original Drawings.

3. File Submittal Format: Submit or post coordination drawing files using format same as file preparation format and Portable Data File (PDF) format.

1.07 REQUESTS FOR INFORMATION (RFIS)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
 1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
 1. Project name.
 2. Project number.
 3. Date.
 4. Name of Contractor.
 5. Name of Architect.
 6. RFI number, numbered sequentially.
 7. RFI subject.
 8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 12. Contractor's signature.
 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: CSI Form 13.2A-2007 Request for Interpretation .
 1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
 1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.

- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Use CSI Log Form 13.2B. Include the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect.
 4. RFI number including RFIs that were returned without action or withdrawn.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's response was received.
- F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.
1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
 2. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

1.08 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.
- B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.
1. Conduct the conference to review responsibilities and personnel assignments.
 2. Attendees: Authorized representatives of Owner Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Lines of communications.
 - f. Procedures for processing field decisions and Change Orders.
 - g. Procedures for RFIs.
 - h. Procedures for testing and inspecting.
 - i. Procedures for processing Applications for Payment.
 - j. Distribution of the Contract Documents.
 - k. Submittal procedures.
 - l. Preparation of record documents.
 - m. Use of the premises.
 - n. Work restrictions.
 - o. Working hours.
 - p. Owner's occupancy requirements.
 - q. Responsibility for temporary facilities and controls.

- r. Procedures for moisture and mold control.
 - s. Procedures for disruptions and shutdowns.
 - t. Construction waste management and recycling.
 - u. Parking availability.
 - v. Office, work, and storage areas.
 - w. Equipment deliveries and priorities.
 - x. First aid.
 - y. Security.
 - z. Progress cleaning.
4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
 - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Sustainable design requirements.
 - i. Review of mockups.
 - j. Possible conflicts.
 - k. Compatibility requirements.
 - l. Time schedules.
 - m. Weather limitations.
 - n. Manufacturer's written instructions.
 - o. Warranty requirements.
 - p. Compatibility of materials.
 - q. Acceptability of substrates.
 - r. Temporary facilities and controls.
 - s. Space and access limitations.
 - t. Regulations of authorities having jurisdiction.
 - u. Testing and inspecting requirements.
 - v. Installation procedures.
 - w. Coordination with other work.
 - x. Required performance results.
 - y. Protection of adjacent work.
 - z. Protection of construction and personnel.
 - 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 - 4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
 - 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

- D. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Architect, but no later than 90 days prior to the scheduled date of Substantial Completion.
1. Conduct the conference to review requirements and responsibilities related to Project closeout.
 2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
 - a. Preparation of record documents.
 - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
 - c. Submittal of written warranties.
 - d. Requirements for preparing operations and maintenance data.
 - e. Requirements for delivery of material samples, attic stock, and spare parts.
 - f. Requirements for demonstration and training.
 - g. Preparation of Contractor's punch list.
 - h. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
 - i. Submittal procedures.
 - j. Owner's partial occupancy requirements.
 - k. Installation of Owner's furniture, fixtures, and equipment.
 - l. Responsibility for removing temporary facilities and controls.
 4. Minutes: Entity conducting meeting will record and distribute meeting minutes.
- E. Progress Meetings: Conduct progress meetings at regular intervals.
1. Coordinate dates of meetings with preparation of payment requests.
 2. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Progress cleaning.
 - 10) Quality and work standards.
 - 11) Status of correction of deficient items.

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- 12) Field observations.
 - 13) Status of RFIs.
 - 14) Status of proposal requests.
 - 15) Pending changes.
 - 16) Status of Change Orders.
 - 17) Pending claims and disputes.
 - 18) Documentation of information for payment requests.
4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
- a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 31 00

SECTION 01 31 29 - TIME EXTENSIONS DUE TO ABNORMAL WEATHER CONDITIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes requirements and means for determining and granting extensions for delays due to abnormal weather conditions.
- B. Related Requirements:
 - 1. Division 01 Section "Construction Progress Documentation" for construction scheduling.

1.03 DEFINITIONS

- A. Contract Time: The period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.
- B. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- C. Critical Path Activities: Work activities which form part of the critical path.
- D. Abnormal Adverse Weather: Adverse weather conditions in excess of the norm for the Project area based on historic averages as reported by NOAA.
 - 1. Precipitation: Abnormal will be interpreted as the number of days in excess of the norm during which rainfall exceeds 0.01 inch and/or snow/ice pellets exceed 1.0 inch.
 - 2. Temperature: No extension of time will be allowed for extreme temperatures unless the installation of a material specified to be installed within certain temperature limits is delayed due to temperature extremes. Extensions of time will then only be granted if conditions specified herein are followed.

1.04 ACTION SUBMITTALS

- A. Submit the following with claims for time extensions due to abnormal adverse weather:
 - 1. NOAA Local Climatological Data (LCD) from reporting station nearest to Project site for the month in which the delay occurred and for the prior year obtained from www.ncdc.noaa.gov/IPS/lcd/lcd.html#SAMPLES.
 - 2. Description of impact to ongoing Work activities.
 - 3. Probable effect of claimed time delay on progress of the Work.
- B. Submit electronic notice of weather delays to Owner's Representative within 24 hours of occurrence.

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- C. Submit claims for time extensions due to abnormal adverse weather monthly for the prior month's work, include copies of electronic notices of weather delays, with Application for Payment and in accordance with the Owner-Contractor Agreement.

1.05 CLAIMS FOR TIME EXTENSIONS

- A. Contract Time shall include the impact of delays due to normal adverse weather which can be reasonably anticipated.
- B. Time extensions due to abnormal adverse weather may be granted for adverse weather in excess of that which can be reasonably anticipated and which directly impacts critical path activities.
- C. Claims for time extensions due to abnormal adverse weather will only be considered if the following conditions exist:
 - 1. Delays exceed the time included for normal adverse weather delays on a cumulative monthly basis.
 - 2. Electronic notice of weather delay was received by Owner's Representative within 24 hours of occurrence.
 - 3. Contractor substantiates in a manner acceptable to the Architect, that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction by preventing the execution of major items impacting the critical path for completion.
- D. Claims for time extensions due to abnormal adverse weather will not be considered if the following conditions exist:
 - 1. Delay occurred during non-working hours.
 - 2. Delay occurred on non-working days (Saturdays, Sundays or holidays).
 - 3. Procedure specified herein is not followed.

1.06 DETERMINATION OF TIME EXTENSIONS

- A. Changes to Contract Time as a result of excess of weather delays will not be made until near the end of Project. Final determination will be based on a comparison of claims of delays made versus average days scheduled, and after determining that the actual delays negatively impacted the critical path activities.

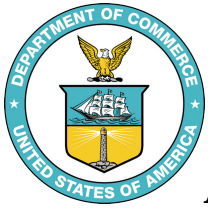
PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 ATTACHMENTS

- A. A sample LCD weather report is attached following this Section.

END OF SECTION 01 31 29

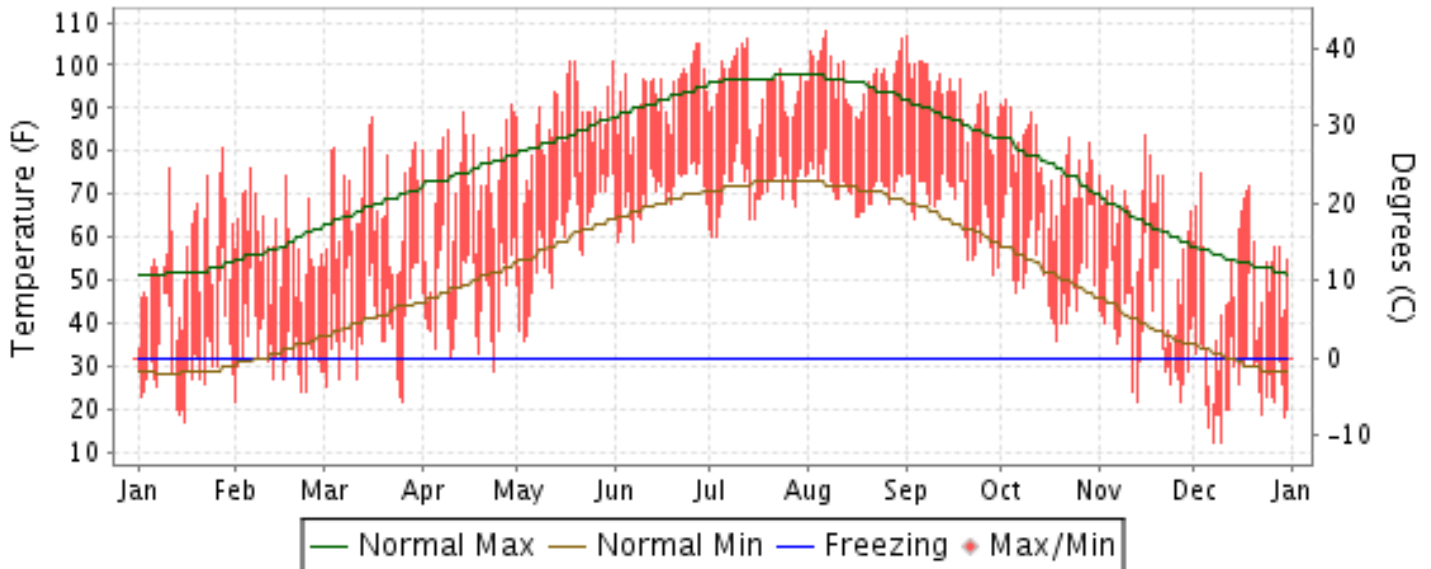


2013 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

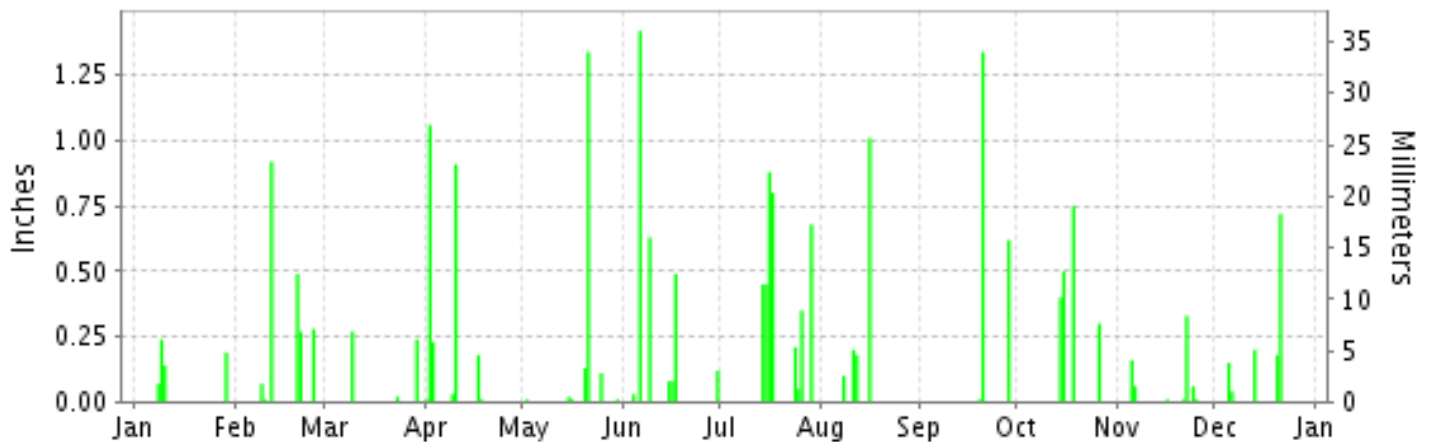
WICHITA FALLS,
TEXAS (KSPS)

ISSN 0198-5248

Daily Max/Min Temperature



Daily Precipitation



Daily Station Pressure



I CERTIFY THAT THIS IS AN OFFICIAL PUBLICATION OF THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, AND IS COMPILED FROM RECORDS ON FILE AT THE NATIONAL CLIMATIC DATA CENTER.

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NATIONAL
ENVIRONMENTAL SATELLITE, DATA
AND INFORMATION SERVICE

NATIONAL
CLIMATIC DATA CENTER
ASHEVILLE, NORTH CAROLINA

Thomas R. Karl
DIRECTOR
NATIONAL CLIMATIC DATA CENTER

METEOROLOGICAL DATA FOR 2013

WICHITA FALLS (KSPS)

LATITUDE: 33° 58'N **LONGITUDE:** 98° 29'W **ELEVATION (FT):** GRND: 1017 BARO: 1013 **TIME ZONE:** CENTRAL (UTC -6) **WBAN: 13966**

	ELEMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	MEAN DAILY MAXIMUM	55.9	59.2	67.6	72.7	85.6	93.8	94.6	97.3	92.9	77.5	61.3	50.5	75.7
	HIGHEST DAILY MAXIMUM	81	76	88	91	101	105	106	108	107	92	84	75	108
	DATE OF OCCURRENCE	28	06	16	29	31+	28+	13	07	01	03	16	03	AUG 07
	MEAN DAILY MINIMUM	31.7	33.3	39.6	45.9	59.5	70.1	71.1	71.7	66.4	52.8	38.3	26.4	50.6
	LOWEST DAILY MINIMUM	17	22	22	29	36	59	60	65	51	36	22	12	12
	DATE OF OCCURRENCE	16	01	26	24	03	07+	03+	17+	29	19	27+	10+	DEC 10+
	AVERAGE DRY BULB	43.8	46.3	53.6	59.3	72.6	82.0	82.9	84.5	79.7	65.2	49.8	38.4	63.2
	MEAN WET BULB	38.5	40.0	44.7	51.9	62.3	69.3	70.2	71.0	66.7	57.1	43.4	33.4	54.0
	MEAN DEW POINT	31.6	32.1	34.2	45.3	54.9	62.5	63.4	64.4	59.0	51.1	36.0	27.4	46.8
	NUMBER OF DAYS WITH:													
	MAXIMUM >= 90°	0	0	0	1	10	21	23	27	22	4	0	0	108
	MAXIMUM <= 32°	0	0	0	0	0	0	0	0	0	0	0	3	3
	MINIMUM <= 32°	20	17	7	2	0	0	0	0	0	0	11	25	82
	MINIMUM <= 0°	0	0	0	0	0	0	0	0	0	0	0	0	0
H/C	HEATING DEGREE DAYS	654	517	361	219	52	0	0	0	0	102	456	815	3176
	COOLING DEGREE DAYS	5	0	15	57	293	517	559	613	446	115	8	0	2628
RH	MEAN (PERCENT)	66	63	53	64	59	56	57	55	54	66	64	70	61
	HOURLY 00 LST	74	69	61	74	70	64	64	65	62	74	72	75	69
	HOURLY 06 LST	82	80	71	83	80	78	77	78	76	81	77	83	79
	HOURLY 12 LST	57	53	42	53	46	44	46	40	39	54	51	60	49
	HOURLY 18 LST	52	47	35	48	41	36	41	36	37	54	56	62	45
W/O	NUMBER OF DAYS WITH:													
	HEAVY FOG(VISBY <= 1/4 MI)	1	2	0	0	0	0	0	0	0	0	0	4	7
	THUNDERSTORMS	1	3	2	5	4	5	5	3	2	2	0	0	32
PR	MEAN STATION PRESS. (IN.)	29.04	28.91	28.93	28.83	28.82	28.82	28.88	28.88	28.85	28.90	29.08	29.04	28.92
	MEAN SEA-LEVEL PRESS. (IN.)	30.15	30.02	30.02	29.91	29.89	29.88	29.94	29.94	29.91	29.99	30.19	30.16	30.00
WINDS	RESULTANT SPEED (MPH)	1.1	1.2	1.7	4.0	7.2	6.5	5.6	4.7	4.3	3.9	2.2	0.9	3.2
	RES. DIR. (TENS OF DEGS.)	31	06	13	14	16	15	15	15	14	15	14	32	15
	MEAN SPEED (MPH)	9.6	11.2	12.3	13.4	14.8	12.2	9.7	9.0	9.0	11.2	11.8	9.6	11.2
	PREVAIL.DIR.(TENS OF DEGS.)	36	34	17	15	18	17	19	17	15	16	16	01	18
	MAXIMUM 2-MINUTE WIND													
	SPEED (MPH)	36	35	44	40	41	52	41	44	29	33	37	31	52
	DIR. (TENS OF DEGS.)	28	36	36	01	18	34	08	18	13	36	34	01	34
	DATE OF OCCURRENCE	29	07	04	10	28	17	24	16	07	18	21	29	JUN 17
	MAXIMUM 3-SECOND WIND:													
	SPEED (MPH)	44	41	52	48	53	66	53	59	38	40	45	38	66
	DIR. (TENS OF DEGS.)	28	32	36	36	18	34	06	19	12	33	34	02	34
	DATE OF OCCURRENCE	29	25	05	10	18	17	24	16	07	31	21	29	JUN 17
PRECIPITATION	WATER EQUIVALENT:													
	TOTAL (IN.)	0.64	2.04	0.53	2.43	1.63	2.85	3.87	1.49	1.97	1.95	0.64	1.29	21.33
	GREATEST 24-HOUR (IN.)	0.38	0.92	0.27	1.06	1.47	1.42	1.21	1.01	1.35	0.75	0.33	0.90	1.47
	DATE OF OCCURRENCE	09-10	12	09	02	20-21	06	16-17	16	19-20	18	22	20-21	MAY 20-21
	NUMBER OF DAYS WITH:													
	PRECIPITATION 0.01	4	6	3	7	7	7	8	4	3	4	7	5	65
SNOWFALL	PRECIPITATION 0.10	3	4	2	4	3	4	7	4	2	4	2	4	43
	PRECIPITATION 1.00	0	0	0	1	1	1	0	1	1	0	0	0	5
	SNOW,ICE PELLETS,HAIL													
	TOTAL (IN.)	T	T	0.0	T	T	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.7
	GREATEST 24-HOUR (IN.)	T	T	0.0	T	T	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.5
	DATE OF OCCURRENCE	13+	25+		10	20						24	05	DEC 05
SNOWFALL	MAXIMUM SNOW DEPTH (IN.)	0	0	0	0	0	0	0	0	0	0	T	1	1
	DATE OF OCCURRENCE											23	08+	DEC 08+
	NUMBER OF DAYS WITH:													
	SNOWFALL >= 1.0	0	0	0	0	0	0	0	0	0	0	0	0	0

NORMALS, MEANS, AND EXTREMES

WICHITA FALLS (KSPS)

LATITUDE:
33° 58'N

LONGITUDE:
98° 29'W

ELEVATION (FT):
GRND: 1017 BARO: 1013

TIME ZONE:
CENTRAL (UTC -6)

WBAN: 13966

	ELEMENT	POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	54.2	58.3	67.0	75.8	83.6	91.4	96.9	96.6	88.1	77.0	65.1	54.7	75.7
	MEAN DAILY MAXIMUM	89	53.4	57.1	67.3	76.0	84.0	91.9	97.6	97.4	87.9	78.2	64.1	55.6	75.9
	HIGHEST DAILY MAXIMUM	66	87	93	100	103	110	117	114	113	111	102	89	88	117
	YEAR OF OCCURRENCE		1969	1996	1971	2011	2011	1980	1980	1964	2000	2000	1988	1954	JUN 1980
	MEAN OF EXTREME MAXS.	109	76.1	80.9	87.8	92.2	97.7	101.7	105.5	105.5	100.7	92.9	83.0	77.2	91.8
	NORMAL DAILY MINIMUM	30	29.8	33.5	41.2	49.4	59.6	67.6	71.9	71.4	63.3	52.0	40.3	30.8	50.9
	MEAN DAILY MINIMUM	89	29.9	33.3	41.4	50.5	60.1	68.2	72.9	72.3	63.9	53.3	40.2	32.5	51.5
	LOWEST DAILY MINIMUM	66	-5	-8	8	24	36	51	54	53	38	25	14	-7	-8
	YEAR OF OCCURRENCE		1966	1985	1989	1975	2013	1983	1970	1992	1989	1957	1950	1989	FEB 1985
	MEAN OF EXTREME MINS.	109	13.0	16.8	23.2	33.7	45.6	58.0	64.5	62.4	49.3	36.4	24.7	16.0	37.0
	NORMAL DRY BULB	30	42.0	45.9	54.1	62.6	71.6	79.5	84.4	84.0	75.7	64.5	52.7	42.8	63.3
	MEAN DRY BULB	89	41.7	45.2	54.4	63.3	72.1	80.2	85.3	84.8	75.9	65.7	52.2	44.0	63.7
	MEAN WET BULB	29	34.3	38.0	44.8	52.5	62.0	68.4	69.7	69.2	64.0	54.6	44.3	35.8	53.1
	MEAN DEW POINT	29	31.1	34.5	41.8	49.6	60.0	66.5	67.1	66.8	61.5	52.1	41.4	32.3	50.4
	NORMAL NO. DAYS WITH:														
	MAXIMUM >= 90	30	0.0	0.1	0.7	1.6	7.5	18.7	27.4	26.1	13.6	2.2	0.0	0.0	97.9
	MAXIMUM <= 32	30	1.4	0.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.4	3.9
	MINIMUM <= 32	30	18.9	11.4	4.9	0.5	0.0	0.0	0.0	0.0	0.0	0.3	5.8	17.4	59.2
	MINIMUM <= 0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
H/C	NORMAL HEATING DEG. DAYS	30	713	536	357	142	23	1	0	0	13	113	381	690	2969
	NORMAL COOLING DEG. DAYS	30	1	2	19	70	227	436	601	589	334	97	12	1	2389
RH	NORMAL (PERCENT)	30	66	65	63	62	67	65	57	58	64	66	68	69	64
	HOURLY 00 LST	30	73	73	71	72	78	76	66	68	74	74	76	74	73
	HOURLY 06 LST	30	80	80	79	80	86	85	78	80	84	84	83	81	82
	HOURLY 12 LST	30	56	55	51	49	53	51	44	46	51	52	54	57	52
	HOURLY 18 LST	30	57	52	47	46	51	48	40	42	50	54	60	61	51
S	PERCENT POSSIBLE SUNSHINE														
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG(VISBY <= 1/4 MI)	50	2.0	1.6	0.9	0.7	0.6	0.3	0.2	0.1	0.4	1.1	1.4	1.9	11.2
	THUNDERSTORMS	66	1.0	1.5	3.2	5.3	8.7	7.3	5.3	5.7	4.2	3.6	1.6	0.9	48.3
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)	1	4.8	4.8	7.2	4.4	5.6	2.0	1.6	2.1	3.2	3.2	4.0	4.0	3.9
	MIDNIGHT-MIDNIGHT (OKTAS)	1	4.8	4.0	7.2	3.6	5.6	1.6	1.6	2.4	1.6	2.8	4.0	4.0	3.6
	MEAN NO. DAYS WITH:														
	CLEAR	2	12.0	15.0	9.0	10.0	18.0	24.0	19.0	16.0	3.0	12.0	1.0	1.0	140.0
	PARTLY CLOUDY	2	6.5	3.5	3.0	6.0	6.5	9.5	6.0	4.0	2.0	3.0	3.0	5.0	58.0
	CLOUDY	2	11.0	8.0	4.5	4.0	11.5	1.5	1.0	2.0	1.0	3.0	8.0	5.0	60.5
PR	MEAN STATION PRESSURE(IN)	30	29.02	28.98	28.90	28.83	28.81	28.82	28.87	28.87	28.90	28.93	28.98	29.02	28.91
	MEAN SEA-LEVEL PRES. (IN)	30	30.13	30.08	29.99	29.91	29.87	29.87	29.92	29.93	29.96	30.01	30.07	30.12	29.99
WINDS	MEAN SPEED (MPH)	30	10.8	11.5	12.5	12.9	12.2	11.7	10.8	9.7	9.7	10.7	11.1	10.6	11.2
	PREVAIL.DIR(TENS OF DEGS)	34	36	36	17	17	17	17	17	17	17	17	17	36	17
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	20	46	48	62	48	59	69	60	48	51	46	55	45	69
	DIR. (TENS OF DEGS)		32	28	19	32	02	36	33	01	33	14	15	34	36
	YEAR OF OCCURRENCE		2008	1994	2004	2011	2001	2002	2000	2002	1996	1994	1994	2000	JUN 2002
	MAXIMUM 3-SECOND														
	SPEED (MPH)	20	56	62	91	63	69	94	74	61	64	55	63	54	94
	DIR. (TENS OF DEGS)		32	27	20	34	02	31	27	01	35	19	15	28	31
	YEAR OF OCCURRENCE		2008	1994	2004	2011	2001	2007	1994	2002	2011	2012	1994	2004	JUN 2007
PRECIPITATION	NORMAL (IN)	30	1.14	1.75	2.20	2.61	3.79	4.15	1.59	2.50	2.81	3.11	1.65	1.62	28.92
	MAXIMUM MONTHLY (IN)	69	4.48	4.55	6.29	8.50	13.22	8.60	11.86	7.61	10.23	7.86	6.85	6.93	13.22
	YEAR OF OCCURRENCE		1968	1990	1999	1957	1982	1989	1950	1971	1980	1972	2004	1991	MAY 1982
	MINIMUM MONTHLY (IN)	69	0.00	T	T	0.08	0.01	0.02	0.00	0.00	T	T	0.00	0.02	0.00
	YEAR OF OCCURRENCE		1986	1991	1956	1996	1966	2011	2003	2000	1983	1952	1949	1996	JUL 2003
	MAXIMUM IN 24 HOURS (IN)	69	2.11	3.00	4.32	5.33	5.70	5.36	3.93	5.82	6.22	5.61	2.58	2.98	6.22
	YEAR OF OCCURRENCE		1999	1981	1988	2009	1975	1985	1950	2008	1980	1959	1968	1991	SEP 1980
	NORMAL NO. DAYS WITH:														
	PRECIPITATION >= 0.01	30	4.8	5.3	6.7	6.2	8.7	7.7	5.0	6.2	6.0	7.4	5.3	5.0	74.3
	PRECIPITATION >= 1.00	30	0.2	0.3	0.5	0.7	1.2	1.4	0.4	0.7	1.0	1.1	0.5	0.4	8.4
SNOWFALL	NORMAL (IN)	30	1.4	0.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.0	3.9
	MAXIMUM MONTHLY (IN)	64	11.9	11.8	10.9	0.8	T	T	0.0	0.0	0.0	1.0	3.9	9.1	11.9
	YEAR OF OCCURRENCE		1966	1978	1989	1973	2013	1992	2011			1993	1957	2009	JAN 1966
	MAXIMUM IN 24 HOURS (IN)	64	8.1	5.7	9.7	0.8	T	T	T	0.0	0.0	1.0	3.9	7.8	9.7
	YEAR OF OCCURRENCE		1985	2010	1989	1973	2013	1992	2004			1993	1957	2009	MAR 1989
	MAXIMUM SNOW DEPTH (IN)	58	7	8	10	0	T	0	0	0	0	0	4	8	10
	YEAR OF OCCURRENCE		1966	1985	1989		1951						1976	2009	MAR 1989
	NORMAL NO. DAYS WITH:														
	SNOWFALL >= 1.0	30	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	1.1

PRECIPITATION (inches) 2013 WICHITA FALLS (KSPS)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1984	0.17	0.79	1.48	0.62	1.44	1.78	0.92	3.07	0.80	6.24	3.32	5.03	25.66
1985	1.08	2.61	3.77	6.15	1.69	7.07	0.21	1.75	1.46	3.69	1.11	0.11	30.70
1986	0.00	1.10	0.84	3.24	3.87	7.61	0.77	2.10	6.77	4.37	3.03	0.91	34.61
1987	1.78	4.16	1.89	0.32	10.17	3.74	1.47	2.43	2.20	0.11	1.66	4.84	34.77
1988	1.17	0.60	5.24	2.16	0.93	2.45	0.95	0.58	7.04	0.76	0.51	1.11	23.50
1989	1.04	3.50	1.54	0.32	4.54	8.60	3.19	6.17	5.01	2.25	0.03	0.28	36.47
1990	2.30	4.55	5.38	6.95	5.01	2.73	2.21	2.08	1.78	1.33	2.49	0.97	37.78
1991	2.66	-0.1	0.68	0.99	4.24	2.76	1.91	2.75	8.28	3.92	0.81	6.93	35.92
1992	1.78	1.15	1.27	1.08	3.56	7.94	1.78	1.86	1.73	0.17	4.57	2.21	29.10
1993	1.19	3.37	2.80	3.21	5.25	3.21	0.72	1.21	2.83	2.09	0.58	2.64	29.10
1994	0.22	2.66	1.07	2.01	1.79	1.46	3.10	0.14	1.51	3.74	2.33	0.86	20.89
1995	0.86	0.16	1.64	2.10	7.45	5.14	3.93	T	0.47	2.15	0.05	0.76	24.71
1996	0.06	T	2.33	0.08	0.64	1.89	1.77	5.49	5.00	1.10	3.77	T	22.13
1997	0.35	2.86	0.23	4.20	3.96	2.08	0.11	2.04	0.70	2.19	0.94	4.12	23.78
1998	2.42	2.34	3.84	1.63	0.19	2.25	1.95	1.27	0.21	2.73	2.26	1.94	23.03
1999	2.37	0.19	6.29	3.78	4.86	4.62	T	1.37	1.76	3.50	T	0.72	29.46
2000	0.73	1.20	2.51	2.81	1.33	3.63	0.70	0.00	0.07	6.38	5.16	1.27	25.79
2001	1.55	3.51	0.79	1.20	3.55	T	T	4.22	0.49	0.57	1.16	1.10	18.14
2002	1.16	1.06	3.01	4.42	1.58	4.77	2.92	0.15	2.37	4.62	0.67	1.88	28.61
2003	0.08	0.83	0.43	1.83	4.42	7.01	0.00	2.56	1.97	0.01	1.86	0.11	21.11
2004	1.37	3.12	1.63	1.83	1.81	5.37	4.81	5.42	0.99	3.98	6.85	0.76	37.94
2005	1.48	2.28	0.41	0.28	3.22	2.89	2.34	7.42	4.06	3.76	0.00	0.18	28.32
2006	0.63	0.17	2.74	1.54	2.04	1.04	0.09	1.24	3.56	6.09	0.87	2.25	22.26
2007	2.20	0.91	3.89	2.20	5.81	7.82	2.15	2.83	4.20	0.66	0.62	0.76	34.05
2008	0.01	0.99	2.87	2.83	2.91	3.47	1.05	7.38	1.72	3.41	0.10	1.05	27.79
2009	0.13	0.68	0.37	6.77	3.60	2.49	2.93	1.58	4.09	4.32	0.05	2.11	29.12
2010	1.76	2.47	1.06	4.12	3.76	3.47	3.07	1.99	5.41	1.51	0.23	0.13	28.98
2011	0.25	0.39	0.06	0.35	2.29	0.02	T	0.57	1.56	5.02	1.01	1.45	12.97
2012	2.24	0.60	3.49	2.40	1.05	2.45	0.37	2.68	3.22	0.51	0.20	0.60	19.81
2013	0.64	2.04	0.53	2.43	1.63	2.85	3.87	1.49	1.97	1.95	0.64	1.29	21.33
POR= 109 YRS	1.07	1.33	1.89	2.69	4.36	3.36	1.99	2.25	2.89	2.74	1.55	1.49	27.61

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AVERAGE TEMPERATURE (°F) 2013 WICHITA FALLS (KSPS)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1984	37.2	47.1	51.4	60.1	72.7	82.9	84.8	84.4	73.9	63.3	51.9	46.2	63.0
1985	34.8	40.8	55.9	64.2	72.2	78.1	83.0	85.4	75.9	64.7	50.7	38.6	62.0
1986	45.7	47.6	58.4	65.6	71.1	79.6	86.9	82.5	78.1	63.7	49.0	43.3	64.3
1987	39.2	48.7	51.2	62.1	73.1	78.3	82.2	85.1	74.4	63.8	53.2	42.8	62.8
1988	38.2	43.1	53.5	61.4	72.1	79.5	84.7	86.2	75.5	63.5	54.7	45.8	63.2
1989	46.4	37.2	53.8	65.4	72.5	76.1	82.9	81.0	72.0	66.2	54.6	35.0	61.9
1990	47.9	49.4	55.4	61.6	71.7	84.5	83.0	84.1	79.1	64.1	56.5	39.2	64.7
1991	39.3	51.5	57.0	65.4	73.9	79.8	85.1	81.1	72.0	65.2	48.3	46.8	63.8
1992	43.2	51.3	56.6	63.4	69.4	78.3	83.0	78.9	75.4	66.8	49.9	45.2	63.5
1993	40.9	43.4	52.5	60.5	68.1	78.7	86.1	84.0	73.7		47.2	45.2	
1994	40.3	41.4	54.9	62.5	69.0	82.5	82.6	83.6	74.8	65.9	53.7	46.3	63.1
1995	43.9	48.4	53.0	61.9	68.4	76.4	84.4	83.7	73.8	64.8	53.1	43.7	63.0
1996	39.5	48.5	50.1	61.6	79.0	82.2	86.5	81.5	72.5	63.6	50.9	46.2	63.5
1997	42.0	46.9	56.1	57.7	68.4	77.8	84.4	82.1	78.9	64.4	49.1	41.2	62.4
1998	44.6	47.3	50.5	59.4	76.7	84.2	89.3	85.6	83.4	68.5	55.3	43.3	65.7
1999	44.2	52.8	52.3	63.5	71.1	79.1	86.2	88.5	75.9	65.6	59.0	46.8	65.4
2000	44.8	53.0	56.2	62.7	76.9	78.7	87.0	90.3	79.3	67.7	46.7	36.5	65.0
2001	40.5	44.8	49.8	65.8	73.3	81.5	90.0	85.4	75.1	64.5	57.6	45.7	64.5
2002	45.5	44.9	51.0	64.4	70.2	78.6	82.2	85.0	76.9	59.8	50.6	44.2	62.8
2003	40.7	42.9	53.3	65.0	73.7	76.7	86.0	85.9	73.0	67.7	55.0	47.5	64.0
2004	45.1	42.5	59.3	63.6	73.4	77.3	81.2	78.9	76.5	67.3	53.6	45.5	63.7
2005	44.1	49.1	54.1	63.5	71.3	81.1	83.8	83.0	79.5	65.5	56.2	44.2	64.6
2006	52.5	46.2	59.1	70.1	75.5	82.7	88.4	89.2	74.1	65.6	55.5	46.0	67.1
2007	40.0	46.0	61.4	60.3	72.3	78.4	81.8	85.7	79.7	69.7	57.0	43.7	64.7
2008	44.3	49.1	57.2	63.8	74.7	85.8	86.7	84.6	75.3	66.0	54.2	42.9	65.4
2009	41.9	51.7	57.8	64.3	69.1	81.6	84.4	84.3	74.4	58.9	55.9	37.5	63.5
2010	39.6	39.2	52.4	63.4	71.1	83.2	83.6	87.2	77.9	65.4	54.0	44.9	63.5
2011	38.9	44.5	57.6	69.3	74.1	89.5	92.9	93.4	75.9	65.4	53.7	42.7	66.5
2012	46.5	47.9	61.5	68.1	76.2	82.5	88.4	85.2	76.5	63.0	56.9	45.0	66.5
2013	43.8	46.3	53.6	59.3	72.6	82.0	82.9	84.5	79.7	65.2	49.8	38.4	63.2
POR= 89 YRS	41.7	45.2	54.4	63.3	72.1	80.2	85.3	84.8	75.9	65.7	52.2	44.0	63.7

HEATING DEGREE DAYS (base 65°F) 2013 WICHITA FALLS (KSPS)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1984-85	0	0	65	129	400	582	930	673	301	67	1	0	3148
1985-86	0	0	31	83	431	812	592	482	226	76	12	0	2745
1986-87	0	0	0	98	473	665	791	452	419	162	1	0	3061
1987-88	0	0	0	92	370	682	824	630	376	138	7	0	3119
1988-89	0	0	3	89	318	587	568	772	391	123	16	0	2867
1989-90	0	0	41	100	318	923	525	428	316	154	44	0	2849
1990-91	0	0	3	120	267	793	791	376	265	63	15	0	2693
1991-92	0	0	25	116	496	558	671	391	262	107	35	0	2661
1992-93	0	0	1	47	457	614	737	597	394	169	30	0	3046
1993-94	0	0	15		530	607	756	651	334	145	42	0	
1994-95	0	0	18	98	349	572	646	460	388	148	32	0	2711
1995-96	0	0	41	65	350	656	783	491	476	148	2	0	3012
1996-97	0	0	16	103	419	579	714	500	283	233	30	0	2877
1997-98	0	0	0	155	472	733	625	494	469	189	2	0	3139
1998-99	0	0	0	47	290	664	636	343	388	105	9	0	2482
1999-00	0	0	14	85	195	558	618	342	281	122	16	0	2231
2000-01	0	0	22	86	546	877	754	560	467	70	2	0	3384
2001-02	0	0	6	86	253	595	597	557	443	116	25	0	2678
2002-03	0	0	0	217	431	641	751	617	375	87	9	0	3128
2003-04	0	0	0	46	322	536	610	646	212	103	26	0	2501
2004-05	0	0	0	39	333	599	642	442	334	99	53	0	2541
2005-06	0	0	0	103	289	639	387	522	238	30	6	0	2214
2006-07	0	0	1	104	299	583	768	530	157	197	1	0	2640
2007-08	0	0	0	65	272	654	644	458	280	120	15	0	2508
2008-09	0	0	0	90	329	679	710	375	263	116	46	0	2608
2009-10	0	0	7	197	270	844	778	719	395	101	26	0	3337
2010-11	0	0	3	56	334	616	799	589	266	47	47	0	2757
2011-12	0	0	3	93	349	684	566	493	163	50	1	0	2402
2012-13	0	0	4	158	262	621	654	517	361	219	52	0	2848
2013-	0	0	0	102	456	815							

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COOLING DEGREE DAYS (base 65°F) 2013 WICHITA FALLS (KSPS)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1984	0	0	2	42	262	545	620	609	338	87	13	3	2521
1985	0	0	27	53	230	401	562	638	365	81	11	0	2368
1986	0	2	30	102	204	448	686	552	399	66	0	0	2489
1987	0	0	0	80	258	404	542	629	288	63	21	0	2285
1988	0	0	26	37	234	443	620	664	322	51	15	0	2412
1989	0	0	50	138	253	336	561	506	258	143	12	0	2257
1990	0	0	27	59	259	593	567	596	435	98	17	0	2651
1991	0	1	24	78	296	454	627	506	242	128	3	1	2360
1992	0	0	7	68	178	405	565	436	321	112	11	6	2109
1993	0	0	13	42	137	415	663	595	285		3	0	
1994	0	0	28	76	175	532	550	585	320	131	17	0	2414
1995	0	2	24	64	143	351	609	551	314	70	2	3	2133
1996	0	17	20	53	443	522	672	518	247	67	2	1	2562
1997	7	0	11	19	142	391	605	537	424	141	0	0	2277
1998	1	2	27	30	369	584	760	647	557	164	10	0	3151
1999	0	6	0	69	204	428	664	735	348	110	23	1	2588
2000	0	0	12	59	393	419	689	793	457	173	0	0	2995
2001	0	0	0	99	266	501	782	637	317	75	38	2	2717
2002	0	0	14	101	193	414	540	623	364	65	8	0	2322
2003	0	6	17	94	286	357	659	652	244	139	29	0	2483
2004	0	0	42	69	295	377	510	436	351	119	0	0	2199
2005	0	2	5	59	256	490	591	563	441	126	28	0	2561
2006	3	1	63	191	341	539	734	758	278	133	21	1	3063
2007	0	5	51	60	237	404	528	649	445	216	39	0	2634
2008	9	3	46	90	325	632	682	615	320	128	15	1	2866
2009	0	9	49	103	180	504	612	606	299	17	2	0	2381
2010	0	0	11	61	223	551	585	694	394	74	8	1	2602
2011	0	22	43	180	336	743	873	888	337	114	15	0	3551
2012	0	1	64	149	354	531	730	633	355	103	28	9	2957
2013	5	0	15	57	293	517	559	613	446	115	8	0	2628

SNOWFALL (inches) 2013 WICHITA FALLS (KSPS)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1984-85	0.0	0.0	0.0	0.0	0.0	0.4	8.7	0.2	0.0	0.0	0.0	0.0	9.3
1985-86	0.0	0.0	0.0	0.0	0.0	0.9	0.0	2.3	0.0	0.0	0.0	0.0	3.2
1986-87	0.0	0.0	0.0	0.0	0.0	T	2.4	T	0.0	0.0	0.0	0.0	2.4
1987-88	0.0	0.0	0.0	0.0	0.0	4.1	4.9	3.0	T	0.0	0.0	0.0	12.0
1988-89	0.0	0.0	0.0	0.0	T	T	2.3	T	10.9	0.0	0.0	0.0	13.2
1989-90	0.0	0.0	0.0	T	0.0	T	T	0.0	T	T	T	0.0	T
1990-91	0.0	0.0	0.0	0.0	0.0	1.1	T	0.0	T	0.0	0.0	0.0	1.1
1991-92	0.0	0.0	0.0	T	T	T	8.4	T	0.0	0.0	0.0	T	8.4
1992-93	0.0	0.0	0.0	T	T	T	T	T	T	T	T	T	T
1993-94	0.0	0.0	0.0	1.0	0.0			T	T	0.0	0.0	0.0	
1994-95	0.0	0.0	0.0	0.0	0.0		T	0.0	T	0.0	0.0		
1995-96		0.0	0.0	0.0	0.0			T					
1996-97						T	7.2	T					
1997-98													
1998-99													
1999-00													
2000-01													
2001-02													
2002-03						T	T	0.3	0.0	T	0.0	T	
2003-04	0.0	0.0	0.0	0.0	0.0	0.0	T	5.5	0.0	0.0	0.0	T	5.5
2004-05	T	0.0	0.0	0.0	T	1.3	T	T	0.0	0.0	T	T	1.3
2005-06	0.0	0.0	0.0	0.0	0.0	T	0.0	T	T	0.0	0.0	0.0	T
2006-07	0.0	0.0	0.0	0.0	1.0	0.0	T	T	0.0	T	0.0	0.0	1.0
2007-08	0.0	0.0	0.0	0.0	T	T	T	0.0	T	0.0	0.0	0.0	T
2008-09	0.0	0.0	0.0	0.0	0.0	0.0	T	T	T	T	0.0	0.0	T
2009-10	0.0	0.0	0.0	0.0	0.0	9.1	0.2	5.7	1.6	0.0	0.0	0.0	16.6
2010-11	0.0	0.0	0.0	0.0	0.0	0.0	T	5.8	0.0	T	T	0.0	5.8
2011-12	0.0	0.0	0.0	0.0	0.0	0.1	0.0	1.8	0.0	0.0	0.0	0.0	1.9
2012-13	0.0	0.0	0.0	0.0	0.0	3.5	T	T	0.0	T	T	0.0	3.5
2013-	0.0	0.0	0.0	0.0	0.2	0.5							
POR= 107 YRS	T	0.0	0.0	T	0.2	0.8	1.7	1.3	0.6	T	T	T	4.6

WBAN : 13966

REFERENCE NOTES :

PAGE 1:
THE TEMPERATURE GRAPH SHOWS NORMAL MAXIMUM AND NORMAL MINIMUM DAILY TEMPERATURES (SOLID CURVES) AND THE ACTUAL DAILY HIGH AND LOW TEMPERATURES (VERTICAL BARS).

PAGE 2 AND 3:
H/C INDICATES HEATING AND COOLING DEGREE DAYS.
RH INDICATES RELATIVE HUMIDITY

W/O INDICATES WEATHER AND OBSTRUCTIONS
S INDICATES SUNSHINE.

PR INDICATES PRESSURE.

CLOUDINESS ON PAGE 3 IS THE SUM OF THE CEILOMETER AND SATELLITE DATA NOT TO EXCEED EIGHT EIGHTHS(OKTAS).

GENERAL:

T INDICATES TRACE PRECIPITATION, AN AMOUNT GREATER THAN ZERO BUT LESS THAN THE LOWEST REPORTABLE VALUE.

+ INDICATES THE VALUE ALSO OCCURS ON EARLIER DATES.

BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA.

ASOS INDICATES AUTOMATED SURFACE OBSERVING SYSTEM.

PM INDICATES THE LAST DAY OF THE PREVIOUS MONTH.

POR (PERIOD OF RECORD) BEGINS WITH THE JANUARY DATA MONTH AND IS THE NUMBER OF YEARS USED TO COMPUTE THE MEAN. INDIVIDUAL MONTHS WITHIN THE POR MAY BE MISSING.

WHEN THE POR FOR A NORMAL IS LESS THAN 30 YEARS, THE NORMAL IS PROVISIONAL AND IS BASED ON THE NUMBER OF YEARS INDICATED.

0.* OR * INDICATES THE VALUE OR MEAN-DAYS-WITH IS BETWEEN 0.00 AND 0.05.

CLOUDINESS FOR ASOS STATIONS DIFFERS FROM THE NON-ASOS OBSERVATION TAKEN BY A HUMAN OBSERVER. ASOS STATION CLOUDINESS IS BASED ON TIME-AVERAGED CEILOMETER DATA FOR CLOUDS AT OR BELOW 12,000 FEET

CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS.

GENERAL CONTINUED:

WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. "00" INDICATES CALM. "36" INDICATES TRUE NORTH.

RESULTANT WIND IS THE VECTOR AVERAGE OF THE SPEED AND DIRECTION.

AVERAGE TEMPERATURE IS THE SUM OF THE MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURE DIVIDED BY 2.

SNOWFALL DATA COMPRISE ALL FORMS OF FROZEN

PRECIPITATION, INCLUDING HAIL.

A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65 F.

DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR.

DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY.

WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY.

ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER.

STATION HISTORY STOPPED WITH THE 2009 ANNUAL. IF YOU NEED STATION HISTORY INFORMATION GO TO "Historical Observing Metadata Repository", URL IS:

<http://www.ncdc.noaa.gov/homr/>

SNOWFALL STOPPED MONTH & YEAR INDICATED ABOVE. NO FURTHER YEARS INCLUDED UNLESS RESTARTED.

NOTE:

The "Period of Record:(POR)" for all "averages" is based on "Summary of the Day First Order Station" and "Cooperative Summary of the Day" archives.

2013 WICHITA FALLS TEXAS (KSPS)

Wichita Falls is located in the West Cross Timbers subdivision of the North Central Plains of Texas, about 10 miles south of the Red River and 400 miles northwest of the nearest portion of the Gulf of Mexico. The topography is gently rolling mesquite plain, and the elevation of the area is about 1,000 feet.

This region lies between the humid subtropical climate of east Texas and a continental climate to the north and west. The climate of Wichita Falls is classified as continental. It is characterized by rapid changes in temperature, large daily and annual temperature extremes, and by rather erratic rainfall.

The area lies in the path of polar air masses which move down from the north during the winter season. With the passage of cold fronts or northers in the fall and winter, abrupt drops in temperature of as much as 20 to 30 degrees within an hour sometimes occur. While the area is subject to a wide range of temperature, winters are on the whole relatively mild. January, the coldest month, has an average temperature around 40 degrees. Sub-zero temperatures occur about once every five years.

The summers in Wichita Falls are generally of the continental climate type, characterized by low humidity and windy conditions. Temperatures over 100 degrees are frequent during the common periods of hot weather. July and August, the hottest months, have average temperatures in the middle 80s.

The normal rainfall is nearly 27 inches per year, but the distribution is erratic to such an extent that prolonged dry periods are common. Several lakes in the area provide water for domestic, industrial, and irrigation purposes. The greater part of the rainfall comes in the form of showers rather than general rains. Over 75 percent of the annual moisture occurs during the period from late March to mid November, but dry periods of three to four weeks are to be expected during this time almost every year. While the dry conditions materially affect agriculture in this region, complete crop failure seldom results. Moderate flooding along Holliday Creek and the Wichita River, which run through the city, occur about once in each ten-year period. Snowfall, measuring an inch or more, occurs on average only two days a year.

Wind speeds average over 11 mph, and southerly winds prevail. Rather strong winds are observed in all months. Even though strong, gusty winds occur frequently, severe duststorms are rare. Most severe dust observed in the area is blown in from the north and west.

The area around Wichita Falls enjoys excellent aviation weather. Flying activities are possible on all but a very few days of the year. Approximately 95 percent of the time the ceiling is 1,000 feet or more with visibility of 3 miles or more.

Station History

WICHITA FALLS, TX

NAME	Begin Date	End Date	Latitude	Longitude	Elevation Feet	Relocation	Platform
WICHITA FALLS MUNICIPAL AP	1930-09-01	1943-06-13	33° 58'	-98° 31'	1027		AIRWAYS
WICHITA FALLS MUNICIPAL AP	1993-05-01	2003-04-01	33° 58'	-98° 29'	1030	1 MI E	ASOS, COOP
WICHITA FALLS SHEPPARD AIR BASE	1960-06-23	1963-01-01	33° 58'	-98° 28'	994	2 MI SE	COOP
WICHITA FALLS MUNICIPAL AP	1968-12-01	1973-01-01	33° 58'	-98° 28'	994		AIRWAYS, COOP
WICHITA FALLS MUNICIPAL AP	1943-06-13	1955-02-01	33° 58'	-98° 31'	1027		AIRWAYS, COOP
WICHITA FALLS MUNICIPAL AP	1993-02-28	1993-05-01	33° 58'	-98° 28'	994		COOP
WICHITA FALLS KELL FIELD	1955-02-01	1959-12-31	33° 58'	-98° 31'	1020	225 FT N	AIRWAYS, COOP
WICHITA FALLS MUNICIPAL AP	1973-01-01	1993-02-28	33° 58'	-98° 28'	994		COOP, WXSVC
WICHITA FALLS KELL FIELD	1959-12-31	1960-06-23	33° 58'	-98° 31'	1020		COOP
WICHITA FALLS MUNICIPAL AP	2006-06-15	Present	33° 58'	-98° 29'	1017		ASOS, COOP
WICHITA FALLS MUNICIPAL AP	2003-04-01	2006-06-15	33° 58'	-98° 29'	1017		ASOS, COOP
WICHITA FALLS SHEPPARD AIR BASE	1963-01-01	1968-12-01	33° 58'	-98° 28'	994		AIRWAYS, COOP

Element History

Element	Begin Date	End Date	Frequency	Time Of Observation	Equipment *	Equipment * Modifications	Equipment Exposure
TEMP	1992-02-02	1993-05-01	DAILY	2400	MXMN		
PRECIP	1993-05-01	2003-04-01	HOURLY	2400	TB	RCRD	
PRECIP	2003-04-01	2006-06-15	DAILY	2400	TB	RCRD	
TEMP	1930-09-01	1963-09-01	DAILY	2400			
TEMP	2003-04-01	2006-06-15	DAILY	2400	ATEMP		
PRECIP	1963-09-01	1992-02-02	HOURLY	2400	UNIV	RCRD	
PRECIP	1992-02-02	1993-05-01	HOURLY	2400	UNIV	RCRD	
PRECIP	1930-09-01	1963-09-01	DAILY		UNIV	RCRD	
PRECIP	1963-09-01	1992-02-02	DAILY	2400	UNIV	RCRD	
TEMP	1963-09-01	1992-02-02	DAILY	2400			
TEMP	1993-05-01	2003-04-01	DAILY	2400	HYGR		
PRECIP	2006-06-15	Present	HOURLY	2400	AWPAG	RCRD;HTD	
PRECIP	2006-06-15	Present	DAILY	2400	PCPNX		
PRECIP	1992-02-02	1993-05-01	DAILY	2400	UNIV	RCRD	
PRECIP	1993-05-01	2003-04-01	DAILY	2400	TB	RCRD	
PRECIP	2003-04-01	2006-06-15	HOURLY	2400	TB	RCRD	
TEMP	2006-06-15	Present	DAILY	2400	ATEMP		

* For explanation of codes and abbreviations see Station Metadata link below.

Other Station Information can be found at:

ASOS Implementation by NWS: <http://www.nws.noaa.gov/ops2/Surface/asosimplementation.htm>

Station Metadata website: <http://www.ncdc.noaa.gov/homr>

INQUIRES/COMMENTS CALL: (828) 271-4800, option 2

Fax Number : (828) 271-4876

TDD : (828) 271-4010

Email : ncdc.orders@noaa.gov

NOAA/National Climatic Data Center

Attn: User Engagement & Services Branch

151 Patton Avenue

Asheville, NC 28801-5001

Visit our Web Site for other weather data: www.ncdc.noaa.gov

SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Requirements:
 - 1. Division 01 Section "Payment Procedures" for submitting Applications for Payment and the schedule of values.
 - 2. Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
 - 3. Division 01 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
 - 4. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
 - 5. Division 01 Section "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

1.03 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."
- C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.
- D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.04 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
4. Format: Arrange the following information in a tabular format:
 - a. Scheduled date for first submittal.
 - b. Specification Section number and title.
 - c. Submittal category: Action; informational.
 - d. Name of subcontractor.
 - e. Description of the Work covered.
 - f. Scheduled date for Architect's final release or approval.
 - g. Scheduled date of fabrication.
 - h. Scheduled dates for purchasing.
 - i. Scheduled dates for installation.
 - j. Activity or event number.

1.05 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Architect's Digital Data Files: Electronic digital data files of the Contract Drawings may be provided by Architect for Contractor's use in preparing submittals.
 1. Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings and Project Record Drawings.
 - a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
 - b. Contractor shall execute a data licensing agreement in the form of AIA Form C106-2013, "Digital Data Licensing Agreement" or equivalent agreement form acceptable to Owner and Architect.
 - c. The [following digital data files will be furnished] for each appropriate discipline:
 - 1) Floor plans.
 - 2) Reflected ceiling plans.
 2. File Preparation Format: Same digital data software program, version, and operating system as original Drawings.
 3. File Submittal Format: Submit or post coordination drawing files using format same as file preparation format .
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 15 days for review of each resubmittal.
 4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.
 - a. Sequential review is required where Architect's consultants prepared design drawings and specifications including but not limited to door hardware, structural, food service, fire protection, plumbing, HVAC, electrical, security, Audio-Visual / IT, civil, and landscape components.
- D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier.
 - a. File name shall use Architect's project number followed by a decimal point and then the Specification Section number followed by another decimal point and then a sequential three-digit number (e.g., 4-0467-061000.001). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 4-0467-061000.001.A).
 3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
 4. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner, containing the following information:
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect.
 - d. Name of Contractor.
 - e. Name of firm or entity that prepared submittal.
 - f. Names of subcontractor, manufacturer, and supplier.
 - g. Category and type of submittal.
 - h. Submittal purpose and description.
 - i. Specification Section number and title.
 - j. Specification paragraph number or drawing designation and generic name for each of multiple items.
 - k. Drawing number and detail references, as appropriate.
 - l. Location(s) where product is to be installed, as appropriate.
 - m. Related physical samples submitted directly.
 - n. Indication of full or partial submittal.
 - o. Transmittal number, numbered consecutively.
 - p. Submittal and transmittal distribution record.
 - q. Other necessary identification.
 - r. Remarks.
 5. Metadata: Include the following information as keywords in the electronic submittal file metadata:
 - a. Project name.
 - b. Number and title of appropriate Specification Section.
 - c. Manufacturer name.

- d. Product name.
- E. Options: Identify options requiring selection by Architect.
- F. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 - 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

PART 2 - PRODUCTS

2.01 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
 - 1. Submit electronic submittals via email as PDF electronic files.
 - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 - 2. Action Submittals: Submit three paper copies of each submittal unless otherwise indicated. Architect will return two copies.
 - 3. Informational Submittals: Submit two paper copies of each submittal unless otherwise indicated. Architect will not return copies.
 - 4. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.
 - b. Provide a notarized statement on original paper copy certificates and certifications where indicated.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.

- d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 - 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams showing factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 - 5. Submit Product Data before or concurrent with Samples.
 - 6. Submit Product Data in the following format:
 - a. PDF electronic file.
 - b. Three paper copies of Product Data unless otherwise indicated. Architect will return two copies.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on Architect's digital data drawing files is otherwise permitted.
- 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
 - 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches .
 - 3. Submit Shop Drawings in the following format:
 - a. PDF electronic file.
 - b. Two opaque (bond) copies of each submittal. Architect will return one copy(ies).
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
- 1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 - 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.
 - e. Specification paragraph number and generic name of each item.
 - 3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
 - 4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.

- d. Samples not incorporated into the work, or otherwise designated as Owner's property, are the property of Contractor.
- 5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
- 6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record sample.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
 - 1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
 - 2. Manufacturer and product name, and model number if applicable.
 - 3. Number and name of room or space.
 - 4. Location within room or space.
 - 5. Submit product schedule in the following format:
 - a. PDF electronic file.
 - b. Three paper copies of product schedule or list unless otherwise indicated. Architect will return two copies.
- F. Coordination Drawing Submittals: Comply with requirements specified in Division 01 Section "Project Management and Coordination."
- G. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."
- H. Application for Payment and Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."
- I. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Division 01 Section "Quality Requirements."
- J. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."
- K. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."

- L. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- M. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- N. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- O. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- P. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- Q. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- R. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- S. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- T. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - 1. Name of evaluation organization.
 - 2. Date of evaluation.
 - 3. Time period when report is in effect.
 - 4. Product and manufacturers' names.
 - 5. Description of product.
 - 6. Test procedures and results.
 - 7. Limitations of use.
- U. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- V. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- W. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

- X. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.02 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file and three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.01 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Division 01 Section "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.02 ARCHITECT'S ACTION

- A. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

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- E. Submittals not required by the Contract Documents may be returned by the Architect without action.

END OF SECTION 01 33 00

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.03 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
- D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.04 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.05 ACTION SUBMITTALS

- A. Shop Drawings: For mockups, provide plans, sections, and elevations, indicating materials and size of mockup construction.
 - 1. Indicate manufacturer and model number of individual components.
 - 2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

1.06 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- B. Qualification Data: For Contractor's quality-control personnel.
- C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:
 - 1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality-assurance plan prepared by Architect.

2. Main wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality-assurance plan prepared by Architect.
- D. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
1. Specification Section number and title.
 2. Entity responsible for performing tests and inspections.
 3. Description of test and inspection.
 4. Identification of applicable standards.
 5. Identification of test and inspection methods.
 6. Number of tests and inspections required.
 7. Time schedule or time span for tests and inspections.
 8. Requirements for obtaining samples.
 9. Unique characteristics of each quality-control service.
- 1.07 CONTRACTOR'S QUALITY-CONTROL PLAN
- A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice to Proceed, and not less than five days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.
- B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
1. Project quality-control manager may also serve as Project superintendent.
- C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
- D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
 2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."
 3. Owner-performed tests and inspections indicated in the Contract Documents.
- E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.08 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
1. Date of issue.
 2. Project title and number.
 3. Name, address, and telephone number of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Identification of product and Specification Section.
 8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of technical representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that products at Project site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of factory-authorized service representative making report.
 2. Statement that equipment complies with requirements.
 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 4. Statement whether conditions, products, and installation will affect warranty.
 5. Other required items indicated in individual Specification Sections.
- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.09 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
 - 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
 - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
 - 1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Provide sizes and configurations of test assemblies, mockups, to adequately demonstrate capability of products to comply with performance requirements.
 - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
 - e. Build at testing facility using personnel, products, and methods of construction indicated for the completed Work.

1. When testing is complete, remove test specimens, assemblies, and mockups; do not reuse products on Project.
 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- K. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
 2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
 3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at Project.
 4. Demonstrate the proposed range of aesthetic effects and workmanship.
 5. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
 - a. Allow seven days for initial review and each re-review of each mockup.
 6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 7. Demolish and remove mockups when directed unless otherwise indicated.

1.10 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including

service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."

- D. **Manufacturer's Technical Services:** Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- E. **Retesting/Reinspecting:** Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- F. **Testing Agency Responsibilities:** Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
 - 1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 - 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 - 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 - 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 - 6. Do not perform any duties of Contractor.
- G. **Associated Services:** Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
 - 1. Access to the Work.
 - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 - 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 - 4. Facilities for storage and field curing of test samples.
 - 5. Delivery of samples to testing agencies.
 - 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 - 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- H. **Coordination:** Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
 - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- I. **Schedule of Tests and Inspections:** Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents as a component of Contractor's quality-control plan. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.
 - 1. **Distribution:** Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.11 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner will engage a qualified special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:
- B. Special Tests and Inspections: Conducted by a qualified special inspector as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:
 - 1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
 - 2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 - 3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
 - 4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 - 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 - 6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
 - 1. Date test or inspection was conducted.
 - 2. Description of the Work tested or inspected.
 - 3. Date test or inspection results were transmitted to Architect.
 - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

3.02 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 01 Section "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 40 00

SECTION 01 42 00 - REFERENCES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 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.

1.03 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.
- 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 or standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.04 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. 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. DIN - Deutsches Institut für Normung e.V.; www.din.de.
 2. IAPMO - International Association of Plumbing and Mechanical Officials; www.iapmo.org.
 3. ICC - International Code Council; www.iccsafe.org.
 4. ICC-ES - ICC Evaluation Service, LLC; www.icc-es.org.
- C. 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. COE - Army Corps of Engineers; www.usace.army.mil.
 2. CPSC - Consumer Product Safety Commission; www.cpsc.gov.
 3. DOC - Department of Commerce; National Institute of Standards and Technology; www.nist.gov.
 4. DOD - Department of Defense; <http://dodssp.daps.dla.mil>.
 5. DOE - Department of Energy; www.energy.gov.
 6. EPA - Environmental Protection Agency; www.epa.gov.
 7. FAA - Federal Aviation Administration; www.faa.gov.
 8. FG - Federal Government Publications; www.gpo.gov.
 9. GSA - General Services Administration; www.gsa.gov.
 10. HUD - Department of Housing and Urban Development; www.hud.gov.
 11. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; <http://eetd.lbl.gov>.
 12. OSHA - Occupational Safety & Health Administration; www.osha.gov.
 13. SD - Department of State; www.state.gov.
 14. TRB - Transportation Research Board; National Cooperative Highway Research Program; www.trb.org.
 15. USDA - Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; www.ars.usda.gov.
 16. USDA - Department of Agriculture; Rural Utilities Service; www.usda.gov.
 17. USDJ - Department of Justice; Office of Justice Programs; National Institute of Justice; www.ojp.usdoj.gov.
 18. USP - U.S. Pharmacopeia; www.usp.org.
 19. USPS - United States Postal Service; www.usps.com.
- D. 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. CFR - Code of Federal Regulations; Available from Government Printing Office; www.gpo.gov/fdsys.
 2. DOD - Department of Defense; Military Specifications and Standards; Available from Department of Defense Single Stock Point; <http://dodssp.daps.dla.mil>.
 3. DSCC - Defense Supply Center Columbus; (See FS).

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4. FED-STD - Federal Standard; (See FS).
 5. FS - Federal Specification; Available from Department of Defense Single Stock Point;
<http://dodssp.daps.dla.mil>.
 - a. Available from Defense Standardization Program; www.dsp.dla.mil.
 - b. Available from General Services Administration; www.gsa.gov.
 - c. Available from National Institute of Building Sciences/Whole Building Design Guide; www.wbdg.org/ccb.
 6. MILSPEC - Military Specification and Standards; (See DOD).
 7. USAB - United States Access Board; www.access-board.gov.
 8. USATBCB - U.S. Architectural & Transportation Barriers Compliance Board; (See USAB).
- E. 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. TFS - Texas Forest Service; Forest Resource Development and Sustainable Forestry;
<http://txforestservice.tamu.edu>.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 42 00

SECTION 01 5639 - TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes general protection and pruning of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction.
- B. Related Sections:
 - 1. Section 015000 "Temporary Facilities and Controls" for temporary site fencing.
 - 2. Section 311000 "Site Clearing" for removing existing trees and shrubs.

1.3 DEFINITIONS

- A. Caliper: Diameter of a trunk measured by a diameter tape at 54 inches (150 mm) above the ground.
- B. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction, and indicated on Drawings.
- C. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction
- D. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.
- E. Critical Root Zone: a vertical line from the outside of the tree canopy / drip line to the ground below.

1.4 SUBMITTALS

- A. Product Data: For each type of product provided.
- B. Tree Pruning Schedule: Written schedule detailing scope and extent of pruning of trees to remain that interfere with or are affected by construction.

1. Species and size of tree.
2. Location on site plan. Include unique identifier for each.
3. Reason for pruning.
4. Description of pruning to be performed.
5. Description of maintenance following pruning.

- C. Existing Conditions: Documentation of existing trees and plantings indicated to remain, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.

1. Use sufficiently detailed photographs or videotape.
2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.

1.5 QUALITY ASSURANCE

- A. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed temporary tree and plant protection work similar to that required for this Project.
- B. Pre-installation Conference: Conduct conference at Project site.
1. Review methods and procedures related to temporary tree and plant protection including, but not limited to, the following:
 - a. Construction schedule. Verify availability of materials, personnel, and equipment needed to make progress and avoid delays.
 - b. Enforcing requirements for protection zones.
 - c. Field quality control.

1.6 PROJECT CONDITIONS

- A. The following practices are prohibited within protection zones:
1. Storage of construction materials, debris, or excavated material.
 2. Parking vehicles or equipment.
 3. Foot traffic.
 4. Erection of sheds or structures.
 5. Impoundment of water.
 6. Excavation or other digging unless otherwise indicated.
 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- B. Do not direct vehicle or equipment exhaust toward protection zones.
- C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Topsoil: See top soil specifications.
- B. a top dressing for trees and shrubs, consisting of one of the following:
 - 1. Type: Shredded hardwood mulch.
 - 2. Thickness: 3 inches.
 - 3. Color: Dark hardwood.
- C. Protection-Zone Fencing: Fencing fixed in position and meeting the following requirements.
 - 1. Chain-Link Protection-Zone Fencing: Galvanized-steel fencing fabricated from minimum 2-inch (50-mm) opening, 0.148-inch- (3.76-mm-) diameter wire chain-link fabric; with pipe posts, minimum 2-3/8-inch- (60-mm-) OD line posts, and 2-7/8-inch- (73-mm-) OD corner and pull posts and 0.177-inch- (4.5-mm-) diameter bottom tension wire; with tie wires, hog ring ties, and other accessories for a complete fence system.
 - a. Height: 6 feet (1.8 m).
- D. Lumber Wrap: Non-treated pine lumber measuring 2" x 4" x the necessary length to protect the existing tree from damage by equipment and / or vehicles.
 - 1. Wire on the outside of the lumber wrap strong enough and located in intervals necessary to hold the lumber in place for the duration of construction. Wire shall be located to not damage the existing tree.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

3.2 PREPARATION

- A. Locate and clearly identify trees, shrubs, and other vegetation to remain.
- B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root

systems from ponding, eroding, or excessive wetting caused by dewatering operations.

- C. Tree-Protection Zones: Mulch areas inside tree-protection zones and other areas indicated.
 - 1. Apply 3-inch (100-mm) average thickness of organic mulch. Do not place mulch within 6 inches (150 mm) of tree trunks.

3.3 TREE- AND PLANT-PROTECTION ZONES

- A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones before materials or equipment are brought on the site and construction operations begin in a manner that will prevent people and animals from easily entering protected area except by entrance gates. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation.
 - 1. Chain-Link Fencing: Install to comply with ASTM F 567 and with manufacturer's written instructions.
 - 2. Posts: Set or drive posts into ground one-third the total height of the fence without concrete footings. Do not damage existing roots. Where a post is located on existing paving or concrete to remain, provide appropriate means of post support acceptable to Architect.
- B. Maintain protection zones free of weeds and trash.
- C. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Architect.
- D. Maintain protection-zone fencing and signage in good condition as acceptable to Architect and remove when construction operations are complete and equipment has been removed from the site.

3.4 EXCAVATION

- A. General: Excavate at edge of protection zones and for trenches indicated within protection zones according to requirements in Section 312000 "Earth Moving."
- B. Trenching near Trees: Where trenches are required within protection zones cut roots as required for root pruning.
- C. If encountering large, main lateral roots, expose roots beyond excavation limits as required cut roots approximately 3 inches (75 mm) back from new construction and as required for root pruning.

- D. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.

3.5 ROOT PRUNING

- A. Prune roots that are affected by temporary and permanent construction.
 - 1. Cut roots manually by digging a trench and cutting exposed roots with sharp pruning instruments; do not break, tear, chop, or slant the cuts. If a backhoe or other equipment rips, tears, or pulls roots, excavate back the damaged root and cleanly cut approximately 3 inches (75 mm) back.
 - 2. Cut Ends: Do not paint cut root ends.
 - 3. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
 - 4. Cover exposed roots with burlap and water regularly.
 - 5. Backfill as soon as possible according to requirements for topsoil.
- B. Root Pruning at Edge of Protection Zone: Prune roots of the protection zone, by cleanly cutting all roots to the depth of the required excavation.
- C. Root Pruning within Protection Zone: Clear and excavate to the depth of the required excavation to minimize damage to root systems.
- D. When Pruning roots within the Critical Root Zone:
 - 1. Cleanly cut roots with sharp hand tools, have amended backfill on hand to immediately backfill and water the entire CRZ as well as the new backfill.
 - 2. Remove all construction-related debris from the CRZ and fence-off.
 - 3. Airspade a 30 percent area of the CRZ, incorporating compost into the soil.
 - 4. Mulch the CRZ with 2-4 inches of dark hardwood mulch. Keeping mulch at 6" away from the trunk of the tree.
 - 5. Regularly water the CRZ area that is still intact for the duration of the project schedule.
 - 1. The tree should be maintained per the above items for a time that is according to the project specs / schedule, for the duration of the maintenance period. One year following substantial completion.
 - 2. Fertilize the tree when appropriate and then perform preventative pest spraying throughout the maintenance period, including dormant oil during the winter.

3.6 CROWN PRUNING

- A. Prune branches that are affected by temporary and permanent construction. Prune branches as follows:
 - 1. Prune trees to remain to compensate for root loss caused by damaging or cutting root system. Provide subsequent maintenance during Contract period.
 - 2. Pruning Standards: Prune trees according to ANSI A300 (Part 1).
 - 3. Cut branches with sharp pruning instruments; do not break or chop.
 - 4. Do not apply pruning paint to wounds.
- B. Chip removed branches and dispose of off-site.

3.7 REGRADING

- A. Lowering Grade: Where new finish grade is indicated below existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- B. Lowering Grade within Protection Zone: Where new finish grade is indicated below existing grade around trees, slope grade away from trees unless otherwise indicated.
 - 1. Root Pruning: Prune tree roots exposed by lowering the grade. Do not cut main lateral roots or taproots; cut only smaller roots. Cut roots as required for root pruning.
- C. Raising Grade: Where new finish grade is indicated above existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- D. Minor Fill within Protection Zone: Where existing grade is 2 inches (50 mm) or less below elevation of finish grade, fill with topsoil. Place topsoil in a single uncompacted layer and hand grade to required finish elevations.

3.8 REPAIR AND REPLACEMENT

- A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Architect.
 - 1. Submit details of proposed root cutting and tree and shrub repairs.
 - 2. Perform repairs within 24 hours.
 - 3. Replace vegetation that cannot be repaired and restored to full-growth status, as determined by Architect.

B. Trees: Remove and replace trees indicated to remain that are damaged during construction operations that Architect determines are incapable of restoring to normal growth pattern.

1. Provide new tree(s) of 6-inch (150-mm) caliper size for each tree being replaced. The total caliper replacement inches shall equal the total inches of existing tree(s) being replaced.

a. Species: matching replaced trees.

2. Plant and maintain new trees as specified.

3.9 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove excess excavated material, displaced trees, trash and debris, and legally dispose of them off Owner's property.

END OF SECTION 01 5639

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
 - 1. Division 01 Section "Alternates" for products selected under an alternate.
 - 2. Division 01 Section "Substitution Procedures" for requests for substitutions.
 - 3. Division 01 Section "References" for applicable industry standards for products specified.

1.03 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.04 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
 - 2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product

request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

- a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
- b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.05 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1.06 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 3. Deliver products to Project site in an undamaged condition in manufacturer's original packages and containers or other packaging system with seals unbroken, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:
1. Store products to allow for inspection and measurement of quantity or counting of units.
 2. Store materials in a manner that will not endanger Project structure.
 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
 5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 6. Protect stored products from damage and liquids from freezing.

1.07 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.

- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
 3. See other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.01 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation, unless otherwise indicated.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
 6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," or "or equivalent," or similar wording comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures:
1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 3. Products:
 - a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
 - b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
 4. Manufacturers:
 - a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.

- b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
 - 5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
- C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
- 1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Division 01 Section "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.02 COMPARABLE PRODUCTS

- A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
- 1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 - 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - 3. Evidence that proposed product provides specified warranty.
 - 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 - 5. Samples, if requested.

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 60 00

SECTION 01 73 00 - EXECUTION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. Installation of the Work.
 - 4. Cutting and patching.
 - 5. Coordination of Owner-installed products.
 - 6. Progress cleaning.
 - 7. Starting and adjusting.
 - 8. Protection of installed construction.
 - 9. Correction of the Work.
- B. Related Requirements:
 - 1. Division 01 Section "Summary" for limits on use of Project site.
 - 2. Division 01 Section "Submittal Procedures" for submitting surveys.
 - 3. Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
 - 4. Division 07 Section "Firestopping" for patching penetrations in fire-rated construction.

1.03 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.04 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For land surveyor.
- B. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.
- C. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:
 - 1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
 - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
 - 3. Products: List products to be used for patching and firms or entities that will perform patching work.

4. Dates: Indicate when cutting and patching will be performed.
5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
 - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.

1.05 CLOSEOUT SUBMITTALS

- A. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.
- B. Certified Surveys: Submit two copies signed by land surveyor.
- C. Final Property Survey: Submit copies showing the Work performed and record survey data.

1.06 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include, but are not limited to, the following:
 - a. Primary operational systems and equipment.
 - b. Fire separation assemblies.
 - c. Air or smoke barriers.
 - d. Fire-suppression systems.
 - e. Mechanical systems piping and ducts.
 - f. Control systems.
 - g. Communication systems.
 - h. Fire-detection and -alarm systems.
 - i. Conveying systems.
 - j. Electrical wiring systems.
 - k. Operating systems of special construction.
 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
 - a. Water, moisture, or vapor barriers.
 - b. Membranes and flashings.
 - c. Exterior curtain-wall construction.
 - d. Sprayed fire-resistive material.
 - e. Equipment supports.
 - f. Piping, ductwork, vessels, and equipment.

- g. Noise- and vibration-control elements and systems.
- 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- C. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- D. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - 1. Description of the Work.

2. List of detrimental conditions, including substrates.
3. List of unacceptable installation tolerances.
4. Recommended corrections.

- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.02 PREPARATION

- A. Existing Utility Information: Furnish information to local utility and Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Division 01 Section "Project Management and Coordination."
- E. Surface and Substrate Preparation: Comply with manufacturer's written recommendations for preparation of substrates to receive subsequent work.

3.03 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 2. Establish limits on use of Project site.
 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 4. Inform installers of lines and levels to which they must comply.
 5. Check the location, level and plumb, of every major element as the Work progresses.
 6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
 7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and

electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.04 FIELD ENGINEERING

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
 - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 - 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- C. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.
- D. Final Property Survey: Engage a land surveyor to prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.
 - 1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.
 - 2. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

3.05 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
 - 4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces.

- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.06 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

- E. : Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Division 01 Section "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.07 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction personnel.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
 - 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
 - 2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

3.08 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 - 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Division 01 Section "Construction Waste Management and Disposal."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

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- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.09 STARTING AND ADJUSTING

- A. Coordinate startup and adjusting of equipment and operating components with requirements in Division 01 Section "General Commissioning Requirements."
- B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E. Manufacturer's Field Service: Comply with qualification requirements in Division 01 Section "Quality Requirements."

3.10 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 01 73 00

SECTION 01 77 00 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of the Work.
- B. Related Requirements:
 - 1. Division 01 Section "Photographic Documentation" for submitting final completion construction photographic documentation.
 - 2. Division 01 Section "Execution" for progress cleaning of Project site.
 - 3. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
 - 4. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
 - 5. Division 01 Section "Demonstration and Training" for requirements for instructing Owner's personnel.
- C. In the event of any inconsistent or incompatible provisions, the Uniform General Conditions shall take precedence.

1.03 ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.04 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.
- C. Field Report: For pest control inspection.
- D. Maintenance Contracts: Properly executed continuing maintenance contract specified in individual Specification Sections.
 - 1. Initial Submittal: Submit draft copy of each contract at least 30 days prior to requesting inspection for Substantial Completion. Architect will comment on whether general scope

- and content of contract are acceptable. Correct or revise each contract to comply with Architect's comments.
2. Final Submittal: Submit each maintenance contract in final form prior to requesting inspection for Final Completion.
- E. Schedule of Maintenance Material Items: For maintenance material items specified in other Sections.
1. Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Architect's signature for receipt of submittals.
- 1.05 SUBSTANTIAL COMPLETION PROCEDURES
- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Submit maintenance materials specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number where applicable.
 5. Submit test/adjust/balance records.
 6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Advise Owner of pending insurance changeover requirements.
 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 3. Complete startup and testing of systems and equipment.
 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Division 01 Section "Demonstration and Training."
 6. Advise Owner of changeover in heat and other utilities.
 7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 9. Complete final cleaning requirements, including touchup painting.
 10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for final completion.

1.06 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
1. Submit a final Application for Payment according to Division 01 Section "Payment Procedures."
 2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Submit pest-control final inspection report.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.07 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. Use CSI Form 14.1A or equivalent.
1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Page number.
 4. Submit list of incomplete items in the following format:
 - a. MS Excel electronic file. Architect will return annotated file.
 - b. PDF electronic file. Architect will return annotated file.

1.08 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
 - 4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
 - 1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.01 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.

- c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - h. Sweep concrete floors broom clean in unoccupied spaces.
 - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
 - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - k. Remove labels that are not permanent.
 - l. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - o. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
 - 1) Clean HVAC system in compliance with NADCA Standard 1992-01. Provide written report on completion of cleaning.
 - p. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
 - q. Leave Project clean and ready for occupancy.
- C. Pest Control: Comply with pest control requirements in Division 01 Section "Temporary Facilities and Controls." Prepare written report.
- D. Construction Waste Disposal: Comply with waste disposal requirements in Division 01 Section "Construction Waste Management and Disposal."
- 3.02 REPAIR OF THE WORK
- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
- 1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
 - 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

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3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 01 77 00

Electronic File Agreement

Project: Midwestern State University

Project No.: SL14.003.00B

Date: Month DD, YYYY

CONTRACTOR'S USE OF ARCHITECT'S ELECTRONIC DRAWING FILES

1. In the event that Contractor obtains, whether for a fee or not, a copy of any of Treanor Architects, P.A.'s or its consultants' documents or data in electronic form for use in preparing shop drawings or record drawings, or other permitted use, Treanor Architects, P.A. grants Contractor a limited license to reproduce such data and Contractor agrees that:
 - A. It is understood and agreed that the data contained therein may be altered intentionally or unintentionally by user or others as a result of occurrences beyond the control and knowledge of Treanor Architects, P.A. These include errors in transportation, machine error, environmental factors, as well as operator error. The user, as part of the consideration for accepting the delivery of the electronic forms, agrees to indemnify, defend and hold harmless Treanor Architects, P.A., its insurers, shareholders, officers, directors, employees and consultants from any claims, liabilities, damages, loss and costs, including, but not limited to cost of defense arising out of changes of modifications to the data and electronic media form in the user's possession or released to others by the user and for any use of the electronic media and printed hard copy drawings and specifications. It shall be the user's responsibility to verify that the information contained in and displayed by the electronic media, accurately reflects the information contained in and displayed by the printed hard copy/drawings and/or specifications.
 - B. Under no circumstances shall the transfer of electronic data, or printed copy thereof, be deemed to be a sale by Treanor Architects, P.A. of tangible goods, and Treanor Architects, P.A. makes no warranties, express or implied, of merchantability or of fitness for a particular purpose.
 - C. The electronic data may represent only a portion of the construction document information and, as such, it may be incomplete. Treanor Architects, P.A. makes no representation as to its completeness, currency or accuracy and Treanor Architects, P.A. shall not be responsible to advise Contractor of any changes which may hereafter be made to the electronic data.
 - D. Treanor Architects, P.A. retains all copyrights to the designs, drawings, information and Architectural Works depicted in the electronic data and grants to Contractor a limited license to reproduce such information in connection with Contractor's work on the Project, and no other.
 - E. Treanor Architects, P.A. specifically disclaims all warranties, express or implied, including but not limited to implied warranties of merchantability and of fitness for a particular purpose, with respect to the electronic media and the information contained herein. Treanor Architects, P.A. shall have no liability with respect to any loss or damages directly or indirectly arising out of the use of the electronic media contained thereon. Notwithstanding the foregoing, Treanor Architects, P.A. shall not be liable for any loss of profit, interruption of business, damage to equipment or data, interruption of operations or any damage, including, but not limited to direct, special incidental or consequential damages.

- F. Contractor understands that any transfer or translation of electronic data from one computer system or environment to another can result in loss of important information and Contractor assumes that risk. Further, Contractor understands that the Contractor is responsible for any translation or modification of the electronic data necessary for use by the Contractor.
- G. Treanor Architects, P.A. makes no representation regarding the accuracy, completeness, or permanence neither of electronic files, nor for the merchantability or fitness for a particular purpose. Addenda information or revisions made after the date indicated on the electronic files may not have been incorporated. In the event of a conflict between Treanor Architects, P.A.'s sealed Contract Drawings and the electronic files, the sealed Contract Drawings shall govern. It is the Contractor's responsibility to determine if any conflicts exist. The electronic files shall not be considered to be Contract Documents as defined by the General Conditions of the Contract for Construction.
- H. Contractor shall require all subcontractors or suppliers to whom Contractor furnishes the electronic data to sign an identical copy of this Agreement. For any party who does not so sign this Agreement, Contractor agrees to defend, indemnify and hold harmless Treanor Architects, P.A. from claims, suits, expense, damages or loss, including attorney's fees, arising out of Contractor's furnishing such data to third parties.

AUTHORIZED ACCEPTANCE

by Treanor Architects, P.A.

by Contractor/Sub-Contractor

Signature

Signature

Print Name and Title

Print Name and Title

Date

Date

SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
 - 4. Miscellaneous record submittals.
- B. Related Requirements:
 - 1. Division 01 Section "Execution" for final property survey.
 - 2. Division 01 Section "Closeout Procedures" for general closeout procedures.
 - 3. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.03 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit one set(s) of marked-up record prints.
- B. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.
 - 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.
- D. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit annotated PDF electronic files and directories of each submittal.
- E. Reports: Submit written report weekly indicating items incorporated into project record documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

PART 2 - PRODUCTS

2.01 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
 - 1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

- a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - d. Record and check the markup before enclosing concealed installations.
 - e. Cross-reference record prints to corresponding archive photographic documentation.
2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of foundations below first floor.
 - d. Locations and depths of underground utilities.
 - e. Actual locations of routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.
 - j. Changes made by Change Order or Construction Change Directive.
 - k. Changes made following Architect's written orders.
 - l. Details not on the original Contract Drawings.
 - m. Field records for variable and concealed conditions.
 - n. Record information on the Work that is shown only schematically.
 3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Format: Annotated PDF electronic file with comment function enabled.
 3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
 4. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.

2.02 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.

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3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
5. Note related Change Orders, record Product Data, and record Drawings where applicable.

- B. Format: Submit record Specifications as annotated PDF electronic file .

2.03 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders, record Specifications, and record Drawings where applicable.
- B. Format: Submit record Product Data as annotated PDF electronic file .
1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

2.04 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as PDF electronic file .
1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

PART 3 - EXECUTION

3.01 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

END OF SECTION 01 78 39

SECTION 32 9200 – TURF AND GRASSES**PART 1 GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Solid Sod.
 - 2. Hydromulch.
- B. Related Sections:
 - 1. Retain Sections in subparagraphs below that contain requirements Contractor might expect to find in this Section but are specified in other Sections.
 - 2. Division 31 Section "Site Clearing" for topsoil stripping and stockpiling.
 - 3. Division 31 Section "Earth Moving" for excavation, filling and backfilling, and rough grading.
 - 4. Division 32 Section "Planting Irrigation" for turf irrigation.
 - 5. Division 32 Section "Plants" for border edgings.

1.3 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of topsoil.
- B. Imported Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil. Imported soils must be used if no existing on-site soils or not enough on-site soils are available.
- C. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- D. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- E. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or top surface of a fill or backfill before planting soil is placed.
- F. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- G. Existing On-site soils: Salvaged and stockpiled topsoil that is tested and suitable for use in growing proposed grasses or plants. Soil must be tested and pass or be amended per the soil test. In addition to amendments and / or fertilizers the contractor shall process the soil by raking the soil until it is free of rocks larger than 1" in any direction or any other deleterious materials. Contractors shall not count on only using on-site soils. Imported

soils shall be used to supplement or completely replace on-site soils. It is the contractors responsibility to estimate the amount of soil available on site.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
 - 1. Pesticides and Herbicides: Include product label and manufacturer's application instructions specific to this Project.
 - 2. Sod & Hydromulch: Include product label and manufacturer's application instructions specific to this Project.
 - 3. Imported Topsoil: Include product label and manufacturer's application instructions specific to this Project.
- B. Product Certificates: For soil amendments and fertilizers from manufacturer.
- C. Soil: Laboratory test results clearly stating the existing on-site soils and imported soils are acceptable for turf and grass growth, and the fertilizers / amendments to add to soils to achieve an acceptable condition. Contractor will bid and supply imported topsoil. Existing onsite stockpiled topsoil will only be used if it is determined (by the architect, landscape architect and general contractor) that the existing onsite stockpiled topsoil is acceptable based upon the laboratory test result submittals, quantity of soil, and on-site inspections, by the architect / landscape architect.
 - 1. Laboratory reports from Wallace Laboratories, LLC or approved equal. (310) 615-0116
 - 2. Provide 1 test sample and report for each 250 cubic yard, or a minimum of two samples total, if total stockpiled soil to be used is less than 500 cubic yards, of on-site stock piled top soil to be used on site. Samples to be taken from various areas in the stock piled material.
- D. Schedule of planting that includes delivery of sod and plant material to the site, layout of beds, layout of plant material, bed prep, application of herbicides, pesticides and fertilizers, planting of each bed (or areas of the site), staking, maintenance and all landscape/irrigation/site related items or events. The schedule shall also provide the overall master construction schedule and how the landscaping fits into the master construction schedule and critical path.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Landscape Contractor shall have a permanent office located within a 50-mile radius of the project site.
- B. Pesticide Applicator: State licensed for commercial application.

1.6 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 conformance with state and federal laws, as applicable.

- B. Retain one or more paragraphs below to suit Project. Limit inserts to only those unusual requirements not included in Division 01 Section "Product Requirements."
- C. Bulk Materials:
 - 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants or near or under existing trees.
 - 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 fertilizers and soil amendments with appropriate certificates.

1.7 PROJECT 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.

1.8 MAINTENANCE SERVICE

- A. Initial Turf Maintenance Service: Provide maintenance by skilled employees of Landscape Installer continuously after sod and/or hydromulch is installed and continue until final completion and acceptance by the Landscape Architect and Owner. Maintain as required in Part 3.
- B. After receipt of final completion and acceptance, Landscape Contractor shall maintain the project for an additional 60 days as part of this scope of work. Maintain as required in Part 3.
- C. Upon termination of 60-Day Maintenance period, Landscape Contractor shall notify the Landscape Architect of request for final inspection. At this time all defective work shall be corrected by Landscape Contractor and 1 year guaranty period shall begin.

PART 2 PRODUCTS

2.1 TURFGRASS SEED/SOD

- A. Turfgrass Species: State-certified seed of grass species as follows:
 - 1. TIF 419 Bermuda Grass (Cynodon dactylon 'TIF 419) – solid sod.
 - 2. Zoysia var. (Geo, Jamur, or Zeon varieties only) – solid sod.
 - 3. Sahara Bermuda Grass (Cynodon dactylon 'Sahara') – Hydromulch
 - 4. Annual Rye Grass – Hydromulch

2.2 MULCHES

- A. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.
- B. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors

2.3 IMPORTED TOPSOIL

- A. Imported topsoil for sod and hydromulch lawns shall be supplied by Pitts Sand and Gravel Inc., 940-692-3290, or approved equal., with the following characteristics:
 - 1. General - Topsoil shall be free of roots, clods, stones larger than 1-inch in the greatest dimension, pockets of coarse sand, noxious weeds, sticks, lumber, brush and other litter. It shall not be infested with nematodes or other undesirable disease-causing organisms such as insects and plant pathogens.
 - 2. Topsoil shall be friable and have sufficient structure in order to give good tilth and aeration to the soil.
 - 3. Gradation limits - soil shall be a sandy loam or loam. The definition of soil texture shall be the USDA classification scheme cited below. Gravel over 2 millimeters in diameter shall be less than 20% by weight.
 - 4.

Permeability Rate - Hydraulic

conductivity rate shall be not less than one inch per hour nor more than 20 inches per hour when tested in accordance with the USDA Handbook Number 60, method 34b or other approved methods.
 - 5. Fertility - The range of the essential elemental concentration in soil shall be as follows for approval of source soil:

Ammonium Bicarbonate/DTPA Extraction
parts per million (mg/kilogram
dry weight basis

phosphorus	10 - 40
potassium	100 - 220
iron	5- 35
manganese	0.6 - 6
zinc	1 - 8
copper	0.3 - 5

boron	0.2 - 1
magnesium	50 - 150
sodium	0 - 100
sulfur	25 - 500
molybdenum	0.1 - 2

6. Acidity - The soil pH range measured in the saturation extract (Method 21a, USDA Handbook Number 60) shall be 6.0 - 7.9.
 - a. If the soil pH is between 6 and 7, the maximum permissible elemental concentration shall be reduced 50%. If the soil pH is less than 6.0, the maximum permissible elemental concentration shall be reduced 75%. No more than three metals shall be present at 50% or more of the above values
7. Salinity - The salinity range measured in the saturation extract (Method 3a, USDA Handbook Number 60) shall be 0.5 - 2.5 dS/m.
8. Chloride - The maximum concentration of soluble chloride in the saturation extract (Method 3a, USDA Handbook Number 60) shall be 150 mg/l (parts per million).
9. Boron - The maximum concentration of soluble boron in the saturation extract (Method 3a, USDA Handbook Number 60) shall be 1 mg/l (parts per million).
10. Sodium Adsorption Ratio (SAR) - The maximum SAR shall be 3 measured per Method 20b, USDA Handbook Number 60.
11. Aluminum – Available aluminum measured with the Ammonium Bicarbonate/DTPA Extraction shall be less than 3 parts per million.
12. Soil Organic Matter Content - Sufficient soil organic matter shall be present to impart good physical soil properties but not be excessive to cause toxicity or cause excessive reduction in the volume of soil due to decomposition of organic matter. The desirable range is 3% to 6%. The carbon:nitrogen ratio should be about 10. A high carbon:nitrogen ratio can indicate the presence of hydrocarbons or non-humified organic matter.
13. Calcium Carbonate Content - Free calcium carbonate (limestone) shall not be present for acid-loving plants.
14. Heavy Metals - The maximum permissible elemental concentration in the soil shall not exceed the following concentrations:

Ammonium Bicarbonate/DTPA Extraction
parts per million (mg/kilogram)
dry weight basis

arsenic	1
cadmium	1
chromium	10
cobalt	2
lead	30
mercury	1
nickel	5
selenium	3
silver	0.5
vanadium	3

15. Phytotoxic constituent, herbicides, hydrocarbons etc. - Germination and growth of monocots and dicots shall not be restricted more than 10% compared to the reference soil. Growth inhibiting constituents must not be present.

2.3 FERTILIZERS

- A. Organic fertilizers containing no artificial ingredients nor fillers nor urea or bio-solids.

1. Lady Bug All Purpose Fertilizer 8-2-4, 936-756-4846.

2.4 PESTICIDES / HERBICIDES

- A. General: Pesticide, registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.
- B. Pre-Emergent Herbicide (Selective and Non-Selective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
- C. Post-Emergent Herbicide (Selective and Non-Selective): Effective for controlling weed growth that has already germinated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas to be planted for compliance with requirements and other conditions affecting performance.

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. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
 3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 4. Uniformly moisten excessively dry soil that is not workable and which is too 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 the Landscape Architect and replace with new topsoil.

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 hydromulching overspray.
 2. Protect grade stakes set by others until directed to remove them.

3.3 TURF AREA PREPARATION

(BERMUDA SOD & HYDROMULCH)

- A. Limit turf subgrade preparation to areas to be planted.
1. Landscape Contractor shall be responsible for coordinating finished grade with Sitework Contractor and General Contractor. Landscape Contractor shall be responsible for placement of final 6" to topsoil so rough grades should be left 4" to 6" below desired finished grade. Should excess existing soil or fill be left by Sitework Contractor or General Contractor, Landscape Contractor shall remove excess as needed to allow for the specified depth of topsoil within the turf grass area. Legally dispose of excess soil off-site.
- B. Loosen existing subgrade to a minimum depth of 2 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
- C. Spread imported / or on-site salvaged topsoil to a minimum depth of 6 inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet. Contractor will bid and supply imported topsoil. Existing onsite stockpiled topsoil will only be used if it is determined (by the architect, landscape architect and general contractor) that the existing onsite stockpiled topsoil is acceptable based upon the laboratory test result submittals, quantity of soil, and on-site inspections, by the architect / landscape architect.
- D. Finish Grading: Grade turf areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation.

- E. Islands in parking lot shall have a minimum 5% slope to provide positive drainage unless grading plan specifically shows a different condition.
- F. Roll and rake, remove ridges, and fill depressions to meet finish grades. Contractor shall be responsible for providing positive drainage in all lawn areas. Limit finish grading to areas that can be planted in the immediate future.
- G. Apply Fertilizer, thoroughly and evenly incorporating it with the soil to a depth of 6 inches by discing or other approved methods.
- H. Before installing sod or hydromulch, obtain Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.
- I. Moisten prepared area before installing sod or hydromulch if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

3.4 SOLID SOD

- A. Do not lay dormant sod or install sod on saturated or frozen soil.
- B. Lay sod to form a solid mass with tightly filled joints. Butt ends and sides of sod strips. Do not overlay edges. Stagger strips to offset joints with adjacent courses. Remove excess sod. Sod shall be flush with adjacent curbs and pavement.
- C. Install initial row of sod in a straight line, beginning at bottom of slopes, perpendicular to the direction of the sloped area. Place subsequent rows parallel to the previously installed row.
- D. For slopes 3:1 or greater, stake sod/soil layers together using metal sod stakes that penetrate at least 6" into the subsoil.
- E. Water sod thoroughly with a fine spray immediately after laying.
- F. Roll with light lawn roller to ensure contact with subgrade.
- G. 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 HYDROMULCH

- A. Hydromulch: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydromulch application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.
- B. Mix slurry with tackifier.
- C. Seed Content in Hydromulch slurry shall be as follows:
 - 1. Sahara Bermuda Grass – 4 lbs per 1,000 square feet
 - 2. Annual Rye Grass – 8 lbs per 1,000 square feet
- D. Hydromulch all areas as indicated on plans.
- E. Hydromulch shall be applied in a uniform cover.

- F. Immediately remove and clean all hydromulch overspray from trees, shrubs, curbs, pavement, fire hydrants, light poles and other site improvements.
- G. Saturate hydromulch area with fine water spray immediately after installation. 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 seed.
- H. Sod/seed.

3.6 TURF MAINTENANCE

- A. Maintain and establish turf as prescribed in Section 1 above. Maintenance shall be done on a weekly basis during the months of April through October and on a bi-weekly basis during the months of November through March.
- B. Maintenance shall include 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. 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.
- C. Watering: Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.
- D. Mowing: Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 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.

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 PESTICIDE APPLICATION

- A. Apply pesticides and other chemical products and biological control agents in accordance with requirements of authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

- B. Post-Emergent Herbicides (Selective and Non-Selective): Apply only as necessary to treat already-germinated weeds and in accordance with manufacturer's written recommendations.
- C. Contractor shall notify Owner 48 hours prior to all pesticide applications. Notification shall include place of application as well as products being applied.

3.9 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. 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.
- C. Remove nondegradable erosion-control measures after grass establishment period.
- D. Repair any areas disturbed by or not vegetated under erosion control devices. Repair shall include fine grading the area, installing topsoil, hydromulching and irrigating for establishment.

END OF SECTION 32 9200

SECTION 32 9300 – PLANTS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Plants.
- 2. Planting soils.
- 3. Tree stabilization.
- 4. Landscape edgings.

- B. Related Sections:

- 1. Division 31 Section "Site Clearing" for protection of existing trees and plantings, topsoil stripping and stockpiling, and site clearing.
- 2. Division 31 Section "Earth Moving" for excavation, filling, and rough grading and for subsurface aggregate drainage and drainage backfill materials.
- 3. Division 32 Section "Turf and Grasses" for turf (lawn), hydroseeding, sod and erosion-control materials.
- 4. Division 33 Section "Subdrainage" for below-grade drainage of landscaped areas, paved areas, and wall perimeters.

1.3 DEFINITIONS

- A. Backfill: The earth used to replace or the act of replacing earth in an excavation.
- B. Balled and Burlapped Stock: Plants dug with firm, natural balls of earth in which they were grown, with ball size not less than sizes indicated; wrapped with burlap, tied, rigidly supported, and drum laced with twine with the root flare visible at the surface of the ball as recommended by ANSI Z60.1.

- C. Container-Grown Stock: Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of plant required.
- D. Finish Grade: Elevation of finished surface of planting soil.
- E. Planting Mix: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- F. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- G. Pests: Living organisms that occur where they are not desired, or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- H. Planting Area: Areas to be planted.
- I. Plant; Plants; Plant Material: These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corms, tubers, or herbaceous vegetation.
- J. Root Flare: Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.
- K. Stem Girdling Roots: Roots that encircle the stems (trunks) of trees below the soil surface.
- L. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.
- M. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- N. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated, including soils.
 - 1. Plant Materials: Include quantities, sizes, quality, and sources for plant materials.

2. Pesticides and Herbicides: Include product label and manufacturer's application instructions specific to the Project.
 3. Plant Photographs: Include color photographs in digital format of each required species and size of plant material as it will be furnished to the Project. The actual plants that will be installed. Take photographs from an angle depicting true size and condition of the typical plant to be furnished. Include a scale rod or other measuring device in each photograph. For species where more than 20 plants are required, include a minimum of three photographs showing the average plant, the best quality plant, and the worst quality plant to be furnished. Identify each photograph with the full scientific name of the plant, plant size, and name of the growing nursery.
 4. Contractor shall submit laboratory test reports of imported topsoil and onsite stock piled soils to be used. Report shall clearly state that the imported soils are acceptable for plant growth. The report shall also state that the existing on-site soils are acceptable for plant growth or clearly list the amendment needed to achieve an acceptable condition.
 - 1) Laboratory reports from Wallace Laboratories, LLC or approved equal. (310) 615-0116
 - 2) Provide 1 test sample and report for each 250 cubic yard, or a minimum of two samples total, if total stockpiled soil to be used is less than 500 cubic yards, of on-site stock piled top soil to be used on site. Samples to be taken from various areas in the stock piled material.
- B. Samples for Verification: For each of the following:
1. Organic Mulch: 1-quart volume of mulch; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of color, texture, and organic makeup.
 2. Planting Mix: 1-quart volume of planting mix; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of color, texture.
 3. Aggregates: 1-quart volume; in sealed plastic bags labeled with source. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of color, texture, and organic makeup.
 4. Topsoil: 1-quart volume; in sealed plastic bags labeled with composition of materials by percentage of weight and source. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of color, texture, and organic makeup.

- C. Qualification Data: Landscape Contractor shall have a permanent office located within a 50-mile radius of the project site.
- D. Schedule of planting that includes delivery of plant material to the site, layout of beds, layout of plant material, bed prep, application of herbicides, pesticides and fertilizers, planting of each bed (or areas of the site), staking, maintenance and all landscape/irrigation/site related items or events. The schedule shall also provide the overall master construction schedule and how the landscaping/irrigation fits into the master construction schedule and critical path.
- E. The final as-builts shall be provided by the contractor and shall be CAD generated. The landscape architect will provide their CAD base file for the contractor to use as his starting point. The final CAD file provided by the contractor shall be completely bound (xrefs) and purged.

1.5 QUALITY ASSURANCE

- A. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.
- B. Measurements: Measure according to ANSI Z60.1. Do not prune to obtain required sizes.
 - 1. Trees and Shrubs: Measure with branches and trunks or canes in their normal position. Take height measurements from or near the top of the root flare for field-grown stock and container grown stock. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip to tip. Take caliper measurements 6 inches above the root flare for trees up to 4-inch caliper size, and 12 inches above the root flare for larger sizes.
 - 2. Other Plants: Measure with stems, petioles, and foliage in their normal position.
- C. Plant Material Observation: Landscape Architect may observe plant material either at place of growth or at site before planting for compliance with requirements for genus, species, variety, cultivar, size, and quality. Landscape Architect retains right to observe trees and shrubs further for size and condition of root ball and root systems, pests, disease symptoms, injuries, and latent defects and to reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from Project site.
- D. Notify Architect of sources of planting materials seven days in advance of delivery to site.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws if applicable.

B. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants or near or under existing trees.
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 fertilizers and soil amendments with appropriate certificates.

C. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.**D. Handle planting stock by root ball or container only.****E. Deliver plants after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.**

1. Set balled stock on ground and cover ball with mulch.
2. Do not remove container-grown stock from containers before time of planting.
3. Water root systems of plants stored on-site deeply and thoroughly with a fine-mist spray. Water as often as necessary to maintain root systems in a moist, but not overly-wet condition.

1.7 PROJECT CONDITIONS**A. Field Measurements: Verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.****B. Interruption of Existing Services or Utilities: Do not interrupt services or utilities to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary services or utilities according to requirements indicated:**

1. Notify Landscape Architect, Construction Manager, and Owner no fewer than five working days in advance of proposed interruption of each service or utility.

2. Do not proceed with interruption of services or utilities without Landscape Architect, Construction Manager, or Owner's written permission.
- C. 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 and warranty requirements.
- D. Coordination with Turf Areas (Lawns): Plant trees, shrubs, and other plants after finish grades are established and before planting turf areas unless otherwise indicated.
 1. When planting trees, shrubs, and other plants after planting turf areas, protect turf areas, and promptly repair damage caused by planting operations.

1.8 WARRANTY

- A. Warranty: Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth for a warranty period of 12 months from the date of Substantial Completion.
 1. Failures include, but are not limited to, the following:
 - a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner, or incidents that are beyond Contractor's control.
 - b. Structural failures including plantings falling or blowing over.
 - c. Faulty performance of edgings and tree grates.
 - d. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 2. Include the following remedial actions as a minimum:
 - a. Immediately remove dead plants and replace unless required to plant in the succeeding planting season.
 - b. Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.
 - c. Provide extended warranty for period equal to original warranty period, for replaced plant material.
 - d. Opinion of plant status by the Landscape Architect shall be final.

1.9 MAINTENANCE SERVICE

- A. Initial Maintenance Service for all plant material: Provide maintenance by skilled employees of landscape Installer continuously after plants are installed and continue until final completion and acceptance by the Landscape Architect and Owner. Maintain as required in Part 3.

- B. After receipt of final completion and acceptance, Landscape Contractor shall maintain the project for an additional 12 months as part of this scope of work. Maintain as required in Part 3.
- C. Upon termination of the 12 month Maintenance period, Landscape Contractor shall notify the Landscape Architect of request for final inspection. At this time all defective work shall be corrected by Landscape Contractor. At the end of the 12 month maintenance service/warranty period the landscape contractor shall remove all stakes and guy wires.

PART 2 PRODUCTS

2.1 PLANT MATERIAL

- A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant Schedule or Plant Legend shown on Drawings and complying with ANSI Z60.1; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.
 - 1. Trees with damaged, crooked, or multiple leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than 3/4 inch in diameter; or with stem girdling roots will be rejected.
 - 2. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise indicated.
- B. Provide plants of sizes, grades, and ball or container sizes complying with ANSI Z60.1 for types and form of plants required. Plants of a larger size may be used if acceptable to Architect, with a proportionate increase in size of roots or balls.
- C. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which shall begin at root flare according to ANSI Z60.1. Root flare shall be visible before planting.
- D. Labeling: Label each plant of each variety, size, and caliper with a securely attached, waterproof tag bearing legible designation of common name and full scientific name, including genus and species. Include nomenclature for hybrid, variety, or cultivar, if applicable for the plant as shown on Drawings.

2.2 FERTILIZERS

- A. Organic Fertilizer: Granular organic fertilizer containing no artificial ingredients nor fillers nor urea or bio-solids.

1. Lady Bug All Purpose Fertilizer 8-2-4, 936-756-4846

2.3 PLANTING SOILS

- A. Planting Soil Bed Mix: Backfill Mix for Trees, Shrubs and ground covers shall be supplied by Pitts Sand and Gravel Inc., 940-692-3290, or approved equal..
 1. Physical properties as follows:
 - a. Decomposed Granite 3/8th screened 10%
 - b. Organics 20-30%
 - c. Imported Top Soil (low in clay, high in silt and sand) 60-70%. See below.

B. Imported Topsoil:

Supply high quality imported topsoil of loamy character, high in humus and organic content from local agricultural source. Topsoil to be free from clay, lumps, coarse sands, stones, roots, and other foreign matter. There shall be no toxic amounts of acid or alkaline elements. Topsoil to be used for on-site mixing of backfill mix. Supplier by Organics by Gosh or approved equal.

General - Topsoil shall be free of roots, clods, stones larger than 1-inch in the greatest dimension, pockets of coarse sand, noxious weeds, sticks, lumber, brush and other litter. It shall not be infested with nematodes or other undesirable disease-causing organisms such as insects and plant pathogens.

Topsoil shall be friable and have sufficient structure in order to give good tilth and aeration to the soil.

Gradation limits - soil shall be a sandy loam or loam. The definition of soil texture shall be the USDA classification scheme cited below. Gravel over 2 millimeters in diameter shall be less than 20% by weight.

Permeability Rate - Hydraulic conductivity rate shall be not less than one inch per hour nor more than 20 inches per hour when tested in accordance with the USDA Handbook Number 60, method 34b or other approved methods.

Fertility - The range of the essential elemental concentration in soil shall be as follows for approval of source soil:

Ammonium Bicarbonate/DTPA Extraction parts per million (mg/kilogram dry weight basis

phosphorus	10 - 40
potassium	100 - 220
iron	5- 35
manganese	0.6 - 6
zinc	1 - 8
copper	0.3 - 5
boron	0.2 - 1
magnesium	50 - 150
sodium	0 - 100

sulfur	25 - 500
molybdenum	0.1 - 2

Acidity - The soil pH range measured in the saturation extract (Method 21a, USDA Handbook Number 60) shall be 6.0 - 7.9.

Salinity - The salinity range measured in the saturation extract (Method 3a, USDA Handbook Number 60) shall be 0.5 - 2.5 dS/m.

Chloride - The maximum concentration of soluble chloride in the saturation extract (Method 3a, USDA Handbook Number 60) shall be 150 mg/l (parts per million).

Boron - The maximum concentration of soluble boron in the saturation extract (Method 3a, USDA Handbook Number 60) shall be 1 mg/l (parts per million).

Sodium Adsorption Ratio (SAR) - The maximum SAR shall be 3 measured per Method 20b, USDA Handbook Number 60.

Aluminum – Available aluminum measured with the Ammonium Bicarbonate/DTPA Extraction shall be less than 3 parts per million.

Soil Organic Matter Content - Sufficient soil organic matter shall be present to impart good physical soil properties but not be excessive to cause toxicity or cause excessive reduction in the volume of soil due to decomposition of organic matter. The desirable range is 3% to 6%. The carbon:nitrogen ratio should be about 10. A high carbon:nitrogen ratio can indicate the presence of hydrocarbons or non-humified organic matter.

Calcium Carbonate Content - Free calcium carbonate (limestone) shall not be present for acid-loving plants.

Heavy Metals - The maximum permissible elemental concentration in the soil shall not exceed the following concentrations:

Ammonium Bicarbonate/DTPA Extraction
parts per million (mg/kilogram)
dry weight basis

arsenic	1
cadmium	1
chromium	10
cobalt	2
lead	30
mercury	1
nickel	5
selenium	3
silver	0.5
vanadium	3

If the soil pH is between 6 and 7, the maximum permissible elemental concentration shall be reduced 50%. If the soil pH is less than 6.0, the maximum permissible elemental

concentration shall be reduced 75%. No more than three metals shall be present at 50% or more of the above values.

Phytotoxic constituent, herbicides, hydrocarbons etc. - Germination and growth of monocots and dicots shall not be restricted more than 10% compared to the reference soil. Growth inhibiting constituents must not be present.

2.4 MULCHES

- A. Shredded Hardwood: as supplied Mulch and More, 940-766-0153, or approved equal.

2.5 AGGREGATES

- A. Gravel areas: 25% 1/4". 50% 3/8", and 25% 5/8" size, in Tejas Black (also called Black star). Supplied by Pitts Sand and Gravel Inc., 940-692-3290, or approved equal.
- B. Gravel Maintenance Band: 5/8" size in Tejas Black (also called Black Star). Supplied by Pitts Sand and Gravel Inc., 940-692-3290, or approved equal.

2.6 PESTICIDES & HERBICIDES

- A. General: Pesticide registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.
- B. Pre-Emergent Herbicide (Selective and Non-Selective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
- C. Post-Emergent Herbicide (Selective and Non-Selective): Effective for controlling weed growth that has already germinated.

2.7 LANDSCAPE EDGINGS

- A. Concrete Edging:
 - 1. 12" thick broom-finished concrete.
- B. Steel Edging:
 - 1. Steel Edging by COL-MET, (800) 829-8225, or approved equal.
 - 2. Size: 1/8" x 4" deep with stakes.
 - 3. Color: black

2.8 TREE STABILIZATION

A. Stakes and Guys:

1. Tree Stakes for Shade Tree Planting: 10' length steel "T" posts – PAINTED BLACK – with plastic stake caps at each post.
2. Tree Stakes for Ornamental Tree Planting: 8' length steel "T" posts – PAINTED BLACK – with plastic stake caps at each post.
3. Guying: Arbor Tie, UV resistant polypropylene webbing by Deep Root, 800-458-7668, or approved equal.

B. Below Grade Tree Stabilization:

1. Tomahawk Tree Staking Solutions: 42" Tomahawk Stake, Model 82100, or approved equal.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas to receive plants for compliance with requirements and conditions affecting installation and performance.

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. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
4. Uniformly moisten excessively dry soil that is not workable and which is too 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 and turf areas and existing plants from damage caused by planting operations.
- B. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations, outline areas, adjust locations when requested, and obtain Landscape Architect's acceptance of layout before excavating or planting. Make minor adjustments as required.

3.3 PLANTING AREA ESTABLISHMENT

- A. Bed Preparation:
 - 1. Excavate existing soils or fill material to the depth indicated for ground cover areas or shrub areas. Dispose of excess soils legally offsite or coordinate with civil drawings and specifications to determine if spoils can be used on site.
 - 2. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
 - a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
 - 3. Install planting soil bed mix in prepared bed. Planting soil bed mix shall be installed in continuous beds –POCKET PLANTING OF SHRUBS AND GROUNDCOVERS SHALL NOT BE PERMITTED.
 - a. Groundcover Areas: install 12" of planting soil bed mix.
 - b. Shrub Areas: install 15" of planting soil bed mix.
- B. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.
- C. Before planting, obtain Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 SHRUB AND GROUNDCOVER PLANTING

- A. Apply fertilizers per the manufacturer's recommendations to the prepared planting bed. Allow enough time between the application of fertilizers, for safe planting of all proposed plant material
- B. Remove all plant containers.
- C. Install plants in straight rows using triangular spacing.
- D. Use planting soil bed mix for backfill.

- E. Backfill planting bed in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
- F. Repair settling of plants or finished grade and ensure positive drainage.

3.5 EXCAVATION FOR TREES

- A. Planting Pits for Trees: Excavate circular planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are not acceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit.
 - 1. Excavate approximately two times as wide as ball diameter.
 - 2. Excavate perimeter of pit at least 1 ½ times the depth of the root ball
 - 3. Trees shall be placed so that root flare is 6" above adjacent finished grade. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
- B. Obstructions: Notify Architect if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.
 - 1. All rock in planting beds or pits shall be removed to twice the specified depth (two times the size shown and specified). Where location changes for plant materials are requested, notify Landscape Architect of requested change at least 48 hours prior to need. In the event that locations cannot be adjusted, rock removal will be necessary and shall be the responsibility of the Landscape Contractor.
- C. Drainage:
 - 1. Fill excavations with water and allow to percolate away before positioning trees and shrubs
 - 2. Notify Architect if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.

3.6 TREE, PLANTING

- A. Before planting, verify that root flare is visible at top of root ball according to ANSI Z60.1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.

- B. Apply fertilizers per the manufacturer's recommendations to the tree planting pit. Allow enough time between the application of fertilizers, for safe planting of all proposed plant material.
- C. Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.
- D. Set trees plumb and in center of planting pit with root flare 2 above finish grades.
 - 1. Use planting soil bed mix for backfill.
 - 2. After placing some backfill around root ball to stabilize plant, carefully cut and remove burlap, rope, and wire baskets from tops of root balls and from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
 - 3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
 - 4. Place planting tablets in each planting pit when pit is approximately one-half filled; in amounts recommended in soil reports from soil-testing laboratory. Place tablets beside the root ball about 1 inch from root tips; do not place tablets in bottom of the hole.
 - 5. Continue backfilling process. Water again after placing and tamping final layer of soil.
- E. When planting on slopes, set the plant so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.
- F. Install Tree Stabilization per manufacturer's recommendations or per details shown on drawings.

3.7 TREE, SHRUB, AND GROUNDCOVER PRUNING

- A. Prunethin, and shape trees, shrubs and vines according to standard professional horticultural and arboricultural practices. Unless otherwise indicated by Landscape Architect, do not cut tree leaders; remove only injured, dying, or dead branches from trees and shrubs; and prune to retain natural character.
- B. Apply pruning paint to wounds immediately.

3.8 PLANTING AREA MULCHING

- A. Mulch backfilled surfaces of planting areas and other areas indicated.
 - 1. Trees in Turf Areas: Apply mulch ring of 4-inch depth. Do not place mulch within 6 inches of trunks or stems.
 - 2. Mulch in Planting Areas: Apply 4-inch average depth of shredded hardwood mulch over whole surface of planting area, and finish level with adjacent finish grades.

3.9 PLANT MAINTENANCE

- A. Maintain plantings as prescribed in Section 1 above. Maintenance shall be done on a weekly basis during the months of April through October and on a bi-weekly basis during the months of November through March
- B. Maintenance shall include pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings. Spray or treat as required to keep trees and shrubs free of insects and disease.
- C. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.
- D. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.

3.10 PESTICIDE APPLICATION

- A. Apply pesticides and other chemical products and biological control agents in accordance with authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.
- B. Pre-Emergent Herbicides (Selective and Non-Selective): Apply to tree, shrub, and ground-cover areas in accordance with manufacturer's written recommendations. Do not apply to seeded areas.
- C. Post-Emergent Herbicides (Selective and Non-Selective): Apply only as necessary to treat already-germinated weeds and in accordance with manufacturer's written recommendations.

- D. Contractor shall notify Owner 48 hours prior to all pesticide applications. Notification shall include place of application as well as products being applied.

3.11 CLEANUP AND PROTECTION

- A. During planting, keep adjacent paving and construction clean and work area in an orderly condition.
- B. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.
- C. After installation, remove nursery tags, nursery stakes, tie tape, labels, wire, burlap, and other debris from plant material, planting areas, and Project site.

3.12 DISPOSAL

- A. Remove surplus soil and waste material including excess subsoil, unsuitable soil, trash, and debris and legally dispose of them off Owner's property.

3.13 EXPIRATION OF GUARANTEE PERIOD

- A. Landscape Contractor shall notify Owner or Landscape Architect in writing, 30 days prior to the expiration of the one-year guarantee period. A site inspection will be made by the Owner or Landscape Architect to verify that all work and materials are in good and healthy condition. All work and materials that are determined by the Landscape Architect to be unacceptable or dead shall be replaced at the Landscape Contractor's expense. Upon completion of replacement of all unacceptable work or dead materials, the Landscape Architect will notify the Owner of the guarantee expiration

END OF SECTION 32 9300