

PROJECT MANUAL

TOWN OF RANSOM CANYON

Jones-Warner Park Improvements

Ransom Canyon, Texas



April | 2024

Parkhill Project # 4133923

PROJECT MANUAL

TOWN OF RANSOM CANYON

Jones-Warner Park Improvements

Ransom Canyon, Texas



April | 2024

Parkhill Project # 4133923

04/16/2024

TABLE OF CONTENTS

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

00 01 00	Advertisement for Proposals.....	2
00 11 19	Request for Proposal.....	2
00 21 16	Instructions to Proposers.....	9
00 31 00	Available Project Information.....	1
00 42 00	Proposal Form.....	3
00 52 00	Agreement between Owner and Contractor for Construction Contract.....	1
	AIA Doc A101-2017	8
	AIA Doc A201-2017	44
00 73 43	Wate Rate Requirements.....	7

DIVISION 01 – GENERAL REQUIREMENTS

01 10 00	Summary.....	2
01 20 00	Price and Payment Procedures.....	3
01 30 00	Administrative Requirements	4
	RFI Form.....	1
	AIA Doc C106-2022.....	4
01 40 00	Quality Requirements	3
01 50 00	Temporary Facilities and Controls.....	5
01 60 00	Product Requirements.....	3
01 70 00	Execution and Closeout Requirements	7

DIVISION 02 – EXISTING CONDITIONS

02 41 13	Selective Site Demolition	2
----------	---------------------------------	---

DIVISIONS 03 – 10

Not Used

DIVISION 11 – EQUIPMENT

11 66 00	Athletic Equipment.....	1
----------	-------------------------	---

DIVISIONS 11 – 25

Not Used



04 /16 /2024

DIVISION 26 – ELECTRICAL

26 05 00	Basic Electrical Methods	5
26 05 13	Building Wire and Cable	4
26 05 19	Equipment Wiring System	2
26 05 26	Grounding and Bonding	3
26 05 29	Supporting Devices	2
26 05 33	Conduit	4
26 05 33.16	Boxes	3
26 05 53	Electrical Identification	2
26 24 16	Panelboards	3
26 27 26	Wiring Devices	3
26 28 16.16	Enclosed Switches	2
26 56 68	Exterior Athletic Lighting (Musco)	8

DIVISION 31 – EARTHWORK

31 10 00	Site Clearing	3
31 23 00	Excavation and Fill	5
31 23 00.10	Excavation and Fill for Utilities	6

DIVISION 32 – EXTERIOR IMPROVEMENTS

32 11 50	Flexible Base Course	3
32 13 13	Concrete Paving	13
32 13 65	Surfacing for Concrete Tennis and Pickleball Courts	9
32 13 73	Concrete Paving Joint Sealants	4
32 17 23	Pavement Markings	2
32 31 13	Chain-Link Fences and Gates	4
32 33 00	Site Furnishings	2
32 92 00	Turf and Grasses	6

DIVISIONS 33 – 48

Not Used



04 /16 /2024

DESIGN PROFESSIONAL RESPONSIBILITY

The Specification Sections authenticated by my seal and signature are limited to the following:

DIVISION 26 - ELECTRICAL

- 26 05 00 Basic Electrical Methods
- 26 05 13 Building Wire and Cable
- 26 05 19 Equipment Wiring System
- 26 05 26 Grounding and Bonding
- 26 05 29 Supporting Devices
- 26 05 33 Conduit
- 26 05 33.16 Boxes
- 26 05 53 Identification for Electrical Systems
- 26 24 16 Panelboards
- 26 27 26 Wiring Devices
- 26 28 16.16 Enclosed Switches
- 26 56 68 Exterior Athletic Lighting (Musco)



DOCUMENT 00 01 00 - ADVERTISEMENT FOR PROPOSALS

PART 1 - GENERAL

1.1 PROJECT IDENTIFICATION

Project: Ransom Canyon Jones-Warner Park Improvements
Owner: Town of Ransom Canyon
Architect: Parkhill
4222 85th Street
Lubbock, Texas 79423
806.473.2200
Site: Jones-Warner Park, Ransom Canyon, Texas

1.2 GENERAL DESCRIPTION OF WORK

- A. Work of the Project consists of building a new concrete basketball, resurfacing existing tennis courts, fencing, new concrete parking, lighting, and site amenities.

1.3 TYPE OF PROPOSAL

- A. Submit Competitive Sealed Proposals for General Construction and include all portions of Work including Allowances, and Unit Prices.

1.4 TIME AND PLACE OF PROPOSAL RECEPTION

- A. Sealed Proposals will be received by Elena Quintanilla, Town of Ransom Canyon, City Hall, located at 24 Lee Kitchens Dr., Ransom Canyon, Texas 79366 until 2:00 p.m., local time, on May 7th, 2024, at which time Proposals will be opened and publicly read aloud.

1.5 PRE-PROPOSAL CONFERENCE

- A. A Pre-Proposal conference and walk-through will be held April 23, 2024, at 2:00 p.m., local time, at the Ransom Canyon City Hall. Attendance at the walk-through is not mandatory for Proposal Submission.

1.6 PROPOSAL SECURITY

- A. Proposal Security in the amount of 5 percent of the total largest Proposal must accompany each Proposal in accordance with the Instruction to Proposers.

1.7 PROPOSERS' QUALIFICATION

- A. General Contractor will be required to provide a Performance Bond and Labor and Material Payment bond in an amount equal to 100 percent of the total Contract amount. Procure Bonds from corporate surety approved by Owner.

1.8 OWNER'S RIGHT TO REJECT PROPOSALS

- A. Owner reserves the right to reject any or all Proposals or waive any informalities and irregularities. Owner reserves the right to Contract within 30 days following Proposal opening. No Proposals may be withdrawn during this time.

1.9 LABOR STANDARDS AND WAGE RATE SCHEDULES

- A. Proposer's attention is called to State and Federal laws regarding "Conditions of Employment" and "Minimum-Prevailing Wage Rates" that apply to Work under this Contract.

1.10 EXAMINATION AND PROCUREMENT OF DOCUMENTS

- A. Proposal Documents are available online in PDF format for download free of charge. E-mail ircarrasco@parkhill.com for log-on details.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

DOCUMENT 00 11 19 – REQUEST FOR PROPOSAL

1.1 OWNER

Town of Ransom Canyon
24 Lee Kitchens Dr.
Ransom Canyon, Texas 79366

1.2 PROJECT

Town of Ransom Canyon
Jones-Warner Park Improvements
Ransom Canyon, TX 79366

1.3 ARCHITECT

Parkhill
4222 85th Street
Lubbock, Texas 79423
806.473.2200
Attn: Brent Clifford, RLA

1.4 DESCRIPTION

- A. Town of Ransom Canyon will receive sealed proposals for General Construction Work. You are invited to submit a Proposal on the attached forms for furnishing of all labor, materials, services, and equipment necessary as called for on the Drawings and in the Project Manual.
- B. It is the intent of the Owner to award a Contract to the most responsible Proposer provided the Proposal has been submitted in accordance with the requirements of the Proposal Documents and does not exceed the funds available.

1.5 BASIS OF PROPOSALS

- A. Proposals shall be made on the attached forms for furnishing of all labor, materials, services, and equipment necessary, along with other requirements outlined in the Proposal Form, and as called for on the Drawings and in the Project Manual.

1.6 SUBMISSION OF PROPOSALS

- A. Address to: Town of Ransom Canyon
- B. Location: 24 Lee Kitchens Dr.
Ransom Canyon, TX 79366
- C. Date: May 7, 2024
- D. Time: 2:00 p.m., local time

1.7 PROPOSAL DOCUMENTS

- A. Proposal Documents may be examined by emailing ircarrasco@parkhill.com.
- B. Only Proposers who obtain Proposal Documents through Parkhill will be registered as a document holder (Plan holder) and will therefore automatically receive addenda if/when issued.
- C. Proposal Documents will not be provided to Subcontract Proposers.
- D. No partial sets will be issued.

1.8 ADDENDA

- A. Addenda will be issued to document holders by 1 of the 2 following methods:
 - 1. E-mail notification to document holder with link to download addenda from Parkhill's Info Exchange web site.
 - 2. For document holders not having e-mail address, addenda may be picked up at the issuing Parkhill office or mailed via the United States Postal Service (USPS).
- B. Addenda will not be faxed to document holders.

1.9 PRE-PROPOSAL CONFERENCE

- A. A Pre-Proposal conference will be held on Tuesday, April 23, 2024, at the City Hall at 2:00 p.m., local time. Attendance at the walk-through is not mandatory for Proposal submission.

1.10 PROPOSAL SECURITY

- A. Proposal Security in the sum of 5 percent of the total Proposal amount and in the form of a cashier's check, certified check, or Surety Proposal Bond, shall accompany all Proposals as stipulated in the Instruction to Proposers.

1.11 OPENING OF PROPOSALS

- A. Proposals will be publicly opened and read aloud immediately after closing of Proposal time on Tuesday, May 7, 2024, 2:00 p.m., local time.

1.12 FORMALITIES

- A. The Town of Ransom Canyon reserves the right to waive irregularities and to reject all Proposals.

1.13 APPLICABLE GOVERNING LAWS AND REGULATIONS

- A. In accordance with the Instruction to Proposers, all Proposers shall comply with State Labor Laws concerning wage rates and Texas Family Code concerning affidavit of eligibility to submit Proposals.

END OF SECTION

DOCUMENT 00 21 16 - INSTRUCTIONS TO PROPOSERS

ARTICLE 1 - DEFINITIONS

- 1.1 Proposal Documents include the Proposal Requirements and the proposed Contract Documents. The Proposal Requirements consist of the Advertisement for Proposals, Instructions to Proposers, the Proposal form, and other sample Proposal and Contract forms. The proposed Contract Documents consist of the form of Agreement between Owner and Contractor, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications and all Addenda issued prior to execution of the Contract.
- 1.2 Definitions set forth in the General Conditions of the Contract for Construction, AIA Document A201, or in other Contract Documents are applicable to the Proposal Documents.
- 1.3 Addenda are written, or graphic instruments issued by Architect prior to the execution of the Contract which modify or interpret the Proposal Documents by additions, deletions, clarifications, or corrections.
- 1.4 A Proposal is a complete and properly signed Proposal to do the Work for the sums stipulated therein, submitted in accordance with the Proposal Documents.

ARTICLE 2 - PROPOSER'S REPRESENTATIONS

- 2.1 Proposer, by making a Proposal, represents that:
 - 2.1.1 Proposer has read and understands the Proposal Documents and the Proposal is made in accordance therewith.
 - 2.1.2 Proposer has read and understands the Proposal Documents or Contract documents, to the extent that such documentation relates to the Work for which the Proposal is submitted.
 - 2.1.3 Proposer has visited the site, become familiar with local conditions under which the Work is to be performed and has correlated the Proposer's personal observations with the requirements of the proposed Contract Documents.
 - 2.1.4 Proposal is based upon the materials, equipment and systems required by the Proposal Documents without exception.

ARTICLE 3 - PROPOSAL DOCUMENTS

- 3.1 COPIES
 - 3.1.1 Proposers may obtain complete sets of the Proposal Documents from Parkhill, stated in the Advertisement for Competitive Sealed Proposals.

- 3.1.2 Proposal Documents will not be issued directly to sub-proposers or others unless specifically offered in Advertisement for Competitive Sealed Proposals.
- 3.1.3 Proposers shall use complete sets of Proposal Documents in preparing Proposals; neither Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of Proposal Documents.
- 3.1.4 In making copies of the Proposal Documents available on the above terms, Owner and Architect do so only for the purpose of obtaining Proposals on the Work and do not confer a license or grant permission for any other use of the Proposal Documents.

3.2 INTERPRETATION OR CORRECTION OF PROPOSAL DOCUMENTS

- 3.2.1 Proposer shall carefully study and compare the Proposal Documents with each other, and with other Work being proposed concurrently or presently under construction to the extent that it relates to the Work for which the Proposal is submitted, shall examine the site and local conditions, and shall at once report to the Architect errors, inconsistencies or ambiguities discovered.
- 3.2.2 Proposers and Sub-proposers requiring clarification or interpretation of the Proposal Documents shall make a written request which shall reach the Architect at least 7 days prior to the date for receipt of Proposals.
- 3.2.3 Interpretations, corrections, and changes of the Proposal Documents will be made by Addendum. Interpretations, corrections, and changes of the Proposal Documents made in another manner will not be binding, and Proposers shall not rely upon them.

3.3 SUBSTITUTIONS

- 3.3.1 The materials, products and equipment described in the Proposal Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.
- 3.3.2 No substitution will be considered prior to receipt of Proposals unless written request for approval has been received by Architect at least 7 days prior to the date for receipt of Proposals. Such requests shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including Drawings, performance and test data, and other information necessary for an evaluation. An item by item (line by line) comparison of each item listed in the Specification shall be compiled and submitted comparing specified material/product with proposed substitution. A statement setting forth changes in other material, equipment or other portions of the Work including changes in the Work of other Contracts that incorporation of the proposed substitution would require shall be included. The burden of proof of the merit of the proposed substitution is upon the proposer. Architect's approval is for manufacturer only, and not specific material, system, or equipment. Approved manufacturer's material, system or equipment is subject to additional and final review after award of Contract and submitted for Architect's approval during Construction Administration submittal/Shop Drawing review process. Architect's decision of approval or disapproval of a proposed substitution shall be final.

- 3.3.3 If Architect approves a proposed substitution prior to receipt of Proposals, such approval will be set forth in an Addendum. Proposers shall not rely upon approvals made in any other manner.
- 3.3.4 No substitutions will be considered after the Contract award.
- 3.4 ADDENDA
 - 3.4.1 Addenda will be issued via the Architect's Newforma Info Exchange website or via mail (if internet service is not available) to all who are known by the issuing office to have received a complete set of Proposal Documents.
 - 3.4.2 Copies of Addenda will be made available for inspection wherever Proposal Documents are on file for that purpose.
 - 3.4.3 No Addenda will be issued later than 2 days prior to the date for receipt of Proposals except an Addendum withdrawing the Advertisement for Proposals or one which includes postponement of the date for receipt of Proposals.
 - 3.4.4 Only Proposers who obtain Proposal Documents through Parkhill will be registered as a document holder (Plan holder) and will therefore automatically receive addenda if/when issued.
 - 3.4.5 Each Proposer shall ascertain, prior to submitting a Proposal, that the Proposer has received all Addenda issued, and the Proposer shall acknowledge their receipt in the Proposal.

ARTICLE 4 - PROPOSAL PROCEDURES

- 4.1 FORM AND STYLE OF PROPOSALS
 - 4.1.1 Proposals shall be submitted on forms identical to the form included with the Proposal Documents.
 - 4.1.2 All blanks on the Proposal form shall be filled in by typewriter or manually, in ink.
 - 4.1.3 Where so indicated by the makeup of the Proposal form, sums shall be expressed in both words and figures, and in case of discrepancy between the 2, the amount written in words shall govern.
 - 4.1.4 Interlineations, alterations and erasures must be initialed by the signer of the Proposal.
 - 4.1.5 Where 2 or more Proposals for designated portions of the Work have been requested, Proposer may, without forfeiture of the Proposal security, state Proposer's refusal to accept award of less than the combination of Proposals stipulated by Proposer. Proposer shall make no additional stipulations on the Proposal form nor qualify the Proposal in any other manner.

4.1.6 Each copy of the Proposal shall include the legal name of Proposer and a statement that the Proposer is a sole proprietor, partnership, corporation, or other legal entity. Each copy shall be signed by the person or persons legally authorized to bind Proposer to a Contract. A Proposal by a corporation shall further give the state of incorporation and have the corporate seal affixed. A Proposal submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind Proposer.

4.1.7 All costs associated with the preparation, submission, and delivery of Proposal is the sole responsibility of Proposer.

4.2 PROPOSAL SECURITY

4.2.1 Each Proposal shall be accompanied by a Proposal security as stipulated in the Advertisement for Competitive Sealed Proposals in the form and amount required, pledging that the Proposer will enter into a Contract with Owner on the terms stated in the Proposal and will furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Proposer refuse to enter into such Contract or fail to furnish such bonds, the amount of the Proposal security shall be forfeited to Owner as liquidated damages, not as a penalty. The amount of the Proposal security shall not be forfeited to Owner in the event Owner fails to comply with Subparagraph 6.2.1.

4.2.2 The surety bond shall be written on AIA Document A310, Proposal Bond, or a similar standard form of the Surety, and the attorney-in-fact who executes the bond on behalf of the Surety, shall affix to the bond a certified and current copy of the power of attorney.

4.2.3 Owner will have the right to retain the Proposal security of Proposers to whom an award is being considered until either (a) the Contract has been executed and bonds have been furnished, or (b) the specified time has elapsed so that Proposals may be withdrawn, or (c) all Proposals have been rejected.

4.3 SUBMISSION OF PROPOSALS

4.3.1 All copies of the Proposal, the Proposal security and other documents required to be submitted with the Proposal shall be enclosed in a sealed opaque envelope. The envelope shall be addressed as indicated in the Advertisement for Competitive Sealed Proposals and shall be identified with the Project name, Proposer's name, and address and, if applicable, the designated portion of the Work for which the Proposal is submitted. If the Proposal is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED PROPOSAL ENCLOSED" on the face thereof.

4.3.2 Proposals shall be deposited at the designated location prior to the time and date for receipt of Proposals. Proposals received after the time and date for receipt of Proposals will be returned unopened.

4.3.3 Proposer shall assume full responsibility for timely delivery at the location designated for receipt of Proposals.

4.3.4 Oral, telephonic or telegraphic Proposals are invalid and will not receive consideration.

- 4.3.5 Proposer shall be responsible for all costs associated with preparing the Competitive Sealed Proposal Document response. Owner and Architect shall not incur any costs associated with the production and printing of the Competitive Sealed Proposal Document and post Proposal information.
- 4.3.6 Proposer shall submit 1 original Proposal Form and prepare 3 copies of his Proposal information which will be sealed in an opaque envelope.
- 4.4 MODIFICATION OR WITHDRAWAL OF PROPOSAL
 - 4.4.1 A Proposal may not be modified, withdrawn, or canceled by the Proposer during the stipulated time period following the time and date designated for the receipt of Proposals, and each Proposer so agrees in submitting a Proposal.
 - 4.4.2 Prior to the time and date designated for receipt of Proposals, a Proposal submitted may be modified or withdrawn by notice to the party receiving Proposals at the place designated for receipt of Proposals. Such notice shall be in writing over the signature of the Proposer or by telegram; if by telegram, written confirmation over the signature of the Proposer shall be mailed and postmarked on or before the date and time set for receipt of Proposals. A change shall be so worded as not to reveal the amount of the original Proposal.
 - 4.4.3 Withdrawn Proposals may be resubmitted up to the date and time designated for the receipt of Proposals provided that they are then fully in conformance with these Instructions to Proposers.

ARTICLE 5 - CONSIDERATION OF PROPOSALS

- 5.1 OPENING OF PROPOSALS
 - 5.1.1 As stated in the Advertisement for Competitive Sealed Proposals, the properly identified Proposals, received on time, will be opened publicly, and will be read aloud. An abstract of the same information may, at the discretion of Owner, be made available to the Proposers within a reasonable time.
- 5.2 REJECTION OF PROPOSALS
 - 5.2.1 Owner shall have the right to reject any, or all Proposals, reject a Proposal not accompanied by a required Proposal security, or by other data required by the Proposal documents, or reject a Proposal which is in any way incomplete or irregular.
- 5.3 ACCEPTANCE OF PROPOSAL (AWARD)
 - 5.3.1 It is the intent of Owner to award a Contract to the most responsible Proposer provided the Proposal has been submitted in accordance with the requirements of the Proposal documents and does not exceed the funds available. Owner shall have the right to waive informalities or irregularities in a Proposal received and to accept the Proposal which, in Owner's judgment, is in Owner's own best interests. The issuance of this advertisement for Proposals does not obligate Owner to enter into a Contract.

5.4 SELECTION CRITERIA AND SCORING METHODOLOGY

- 5.4.1 Proposers will be selected using a weighted multiplier for each category of the Selection Criteria. The weighted selection system assigns a specific weight (percentage of total value of 100) to the list of selection criteria below. A weight is determined for each criteria as follows:

	<u>Points</u>	<u>Criteria</u>
--	---------------	-----------------

5.4.1.1	70%	Price - Base Proposal combined.
---------	-----	---------------------------------

5.4.1.2	30%	Construction time.
---------	-----	--------------------

- 5.4.3 A proportional method of scoring will be used for the selection criteria. Since price and construction time are numerical values, a proportional score will be calculated for Proposer's price and time that is larger than the lowest value proposed.

Two Proposers can receive the same point score for the same criteria.

Should a tie occur in the Proposal selection, the lower Construction Cost will be the tiebreaker.

ARTICLE 6 - POST-PROPOSAL INFORMATION

6.1 CONTRACTOR'S QUALIFICATION STATEMENT

- 6.1.1 Proposers to whom award of a Contract is under consideration shall submit to Architect, upon request, a properly executed AIA Document A305, Contractor's Qualification Statement.

6.2 OWNER'S FINANCIAL CAPABILITY

- 6.2.1 Owner shall, at the request of Proposer to whom an award of a Contract is under consideration and no later than 7 days prior to the expiration of the time for withdrawal of Proposals, furnish to Proposer reasonable evidence that financial arrangements have been made to fulfill Owner's obligations under the Contract. Unless such reasonable evidence is furnished, the Proposer will not be required to execute the Agreement between Owner and Contractor.

6.3 SUBMITTALS

- 6.3.1 Proposer shall, as soon as practicable, after notification of selection for the award of a Contract, furnish to Owner through Architect in writing:
- 6.3.1.1 A designation of the Work to be performed with the Proposer's own forces:
 - 6.3.1.2 Names of the manufacturers, products and the suppliers of principal items or systems of materials and equipment proposed for the Work; and

- 6.3.1.3 Names of subcontractors, persons, or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.
- 6.3.2 Proposer will be required to establish, to the satisfaction of the Architect and Owner, the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Proposal Documents.
- 6.3.3 Prior to the award of the Contract, Architect will notify Proposer in writing if either Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Proposer. If Owner or Architect has reasonable objection to a proposed person or entity, the Proposer may, at the Proposer's option, (1) withdraw the Proposal, or (2) submit an acceptable substitute person or entity, with an adjustment in the Base Proposal or Alternate Proposal to cover the difference in cost occasioned by such substitution. Owner may, accept the adjusted Proposal price or disqualify, Proposer. In the event of either withdrawal or disqualification, Proposal security will not be forfeited.
- 6.3.4 Persons and entities proposed by the Proposer and to whom Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of Owner and Architect.

ARTICLE 7 - PERFORMANCE BOND AND PAYMENT BOND

7.1 BOND REQUIREMENTS

- 7.1.1 Proposer shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.
- 7.1.2 The cost shall be included in the Proposal.

7.2 TIME OF DELIVERY AND FORM OF BONDS

- 7.2.1 Proposer shall deliver the required bonds to Owner prior to the execution of the Contract. If the Work is to be commenced prior thereto in response to a letter of intent, Proposer shall, prior to commencement of the Work, submit evidence satisfactory to Owner that such bonds will be furnished and delivered in accordance with this Subparagraph 7.2.1.
- 7.2.2 The bonds shall be written on AIA Document A312, Performance Bond and Payment Bond or the Bonding Company's standard bond forms. Both bonds shall be written in the amount of the Contract Sum.
- 7.2.3 The bonds shall be dated on or after the date of the Contract.
- 7.2.4 Proposer shall require the attorney-in-fact who executes the required bonds on behalf of the surety, to affix thereto a certified and current copy of the power of attorney.

ARTICLE 8 - INSURANCE

8.1 INSURANCE REQUIREMENTS

8.1.1 Proposer shall furnish insurance in the types and amount of coverage required and shall be secured from sources as defined in Owner/Contractor Agreement.

8.1.2 The cost shall be included in the Proposal.

8.2 TIME OF DELIVERY AND FORM OF INSURANCE

8.2.1 Proposer shall deliver the required certificates of insurance coverage to Owner upon its execution of the Contract.

8.2.2 The insurance certificate shall be written on a form acceptable to Owner. Insurance shall be written in the amount required by the Contract.

8.2.3 The insurance certificates shall be dated on or before the date of the Contract.

ARTICLE 9 - FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

9.1 FORM TO BE USED

9.1.1 The Agreement for the Work will be written on AIA Document A101-2017, Standard Form of Agreement Between Owner and Contractor Where the Basis of Payment Is a Stipulated Sum, as amended.

ARTICLE 10 - APPLICABLE GOVERNING LAWS AND REGULATIONS

10.1 WAGE RATES

10.1.1 All Proposers must comply with State Labor Laws as required by current amended provisions of Section 2 of Article 5159a, Texas Civil Statutes. Contractor is required to pay not less than the specified minimum wage rates of the various applicable classes of labor.

10.1.2 Contractor shall forfeit as a penalty to the State, \$60.00 for each laborer, workman or mechanic employed for each calendar day or portion thereof, if such laborer, workman or mechanic is paid less than the said stipulated rates for any Work done under said Contract, by Contractor or by their subcontractor.

10.2 CRIMINAL HISTORY RECORD INFORMATION REVIEW OF CERTAIN CONTRACT EMPLOYEES

- 10.2.1 Comply with Texas EDUCATION CODE, TITLE 2, SUBTITLE D, CHAPTER 22, SUBCHAPTER C, Sec. 22.0834 - CRIMINAL HISTORY RECORD INFORMATION REVIEW OF CERTAIN CONTRACT EMPLOYEES. Before any on-site Work for this Project begins, Contractor shall obtain criminal history record information for all employees who will have continuing on site duties related to Work on this Project. Contractor shall obtain criminal background information requirements from Texas Department of Public Safety Crime Record Services by calling 512.424.2365 and selecting option 3, (Senate Bill 9) and request a packet. The packet will have to be completed and returned to the Texas Department of Public Safety before background checks can be obtained. Contractor and sub-contractor employees can provide information required for background checks to L-1 Identity Solutions located at 3417 73rd, Suite B2, Lubbock, Texas. All costs associated with all criminal history background checks are the sole responsibility of Contractor. If an employee's status changes during the course of this Project, and Contractor is notified of such change, that employee can no longer Work on this Project. All replacement employees shall undergo the same background check before being allowed to Work on this Project.

END OF SECTION

SECTION 00 31 00 – AVAILABLE PROJECT INFORMATION

PART 1 - GENERAL

1.1 SUMMARY

A. Related Sections:

1. Division 01 Specification Sections apply to Work of this Section.

1.2 INFORMATION

A. Property Survey:

1. A survey of the property was authorized by Owner, and the survey was made by:

Parkhill
4222 85th St.
Lubbock, TX 79423
806.473.3799

2. Site layout, Drawings, and boundary traverse and closure information are included in the Drawings.
3. Property survey and site improvement layout is available for Contractor's information only and is not a warranty of existing conditions.

1.3 RESPONSIBILITY

- A. Proposers are expected to examine the geotechnical data report, and site survey information then determine for themselves the validity of the information contained there-in as it relates to this Project.
- B. Architect and Owner do not guarantee continuity of conditions indicated at boring locations and assume no responsibility for variations of subsoil quality or conditions.
- C. Architect and Owner assume no responsibility for variations of site survey information.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

DOCUMENT 00 42 00 - PROPOSAL FORM

Date: _____ 20 _____

Town of Ransom Canyon
24 Lee Kitchens Dr.
Ransom Canyon, TX 79366

Dear Sir or Madam:

The undersigned, having carefully examined the Specifications, Drawings, and related documents entitled:

**TOWN OF RANSOM CANYON
JONES-WARNER PARK IMPROVEMENTS**

all as prepared by Parkhill, as well as having made an on-site inspection of the premises and all other conditions affecting the cost and/or execution of the Work, proposes to furnish all materials, labor, and equipment necessary to complete the Work in accordance with said documents, of which this bid is a part, for the following sum:

TOTAL BASE PROPOSAL (Including Owner's Contingency): _____ Dollars (\$ _____)

Owner Contingency (to be added to Contractor's total): \$25,000.00.

TOTAL ALTERNATE 1- Basketball court lighting and any associated conduit, wiring, breakers, and labor associated with basketball court lighting: _____ Dollars (\$ _____)

GRAND TOTAL: _____ Dollars (\$ _____)

(Note: All amounts shall be shown in both written and figure form. In case of discrepancy between the written amount and the figure, the written amount will govern. For alternates, check whether it is an add, deduct or no change.)

We have included, in the Proposal sum, all applicable taxes and all material and contingency allowances described in Section 01 20 00 "Price and Payment Procedures."

Respectfully Submitted,

By: _____

Title: _____

Business Address with Zip Code

(SEAL: If Proposal is by Corporation)

The undersigned acknowledges receipt of _____ addenda to the Drawings and Project Manual as follows:

No. _____ Date _____ No. _____ Date _____ No. _____ Date _____

No. _____ Date _____ No. _____ Date _____ No. _____ Date _____

(The Proposer is to fill in I.D. Number and date of each thereby acknowledging receipt of Addenda).

If awarded the Contract, the undersigned agrees to commence Work under this Contract on or before a date to be specified in Written Notice to Proceed, and to substantially complete the Project within _____ (Proposer to fill in days) calendar days from said commencement date, unless modified by Change Order.

If notified of the acceptance of this Proposal within 60 days of the time set for the opening of Proposals, Proposer agrees within 10 days of notification, to execute a Contract in the form of the AIA Document A101-2017, Standard Form of Agreement Between Owner and Contractor Where the Basis of Payment Is a Stipulated Sum, as amended.

PROPOSAL SECURITY, as defined in the Request For Proposal and Instructions to Proposers, which the Undersigned agrees to disposition of, as stated in the Request For Proposal and Instructions to Proposers, is attached to this Proposal.

Upon acceptance of this Proposal by Owner, Contractor shall furnish, at the time of the signing of the contract, a PERFORMANCE BOND AND LABOR/MATERIAL PAYMENT BOND, in the amount of 100 percent of the Contract Price. Surety shall meet requirements specified in the Owner/Contractor Agreement.

It is understood that Owner reserves the right to accept or reject any and all Proposals and to waive all formalities in accordance with State law.

Telephone Number with Area Code _____

FAX Number with Area Code _____

Fill in the applicable information:

A Corporation, chartered in the State of _____

Authorized to do business in the State of Texas.

Town of Ransom Canyon
Jones-Warner Park Improvements

A Partnership, composed of _____, and
_____ and
_____.

An Individual operating under the name of _____.

Corporate Seal:

END PROPOSAL FORM

SECTION 00 52 00 – AGREEMENT FORM

PART 1 - GENERAL

1.1 APPLICABLE DOCUMENT

- A. The Agreement for the Work will be written on the Sample Agreement form indicated below and that follows this Section.
 - 1. AIA A101-2017, Standard form of Agreement Between Owner and Contractor where Basis of Payment is a Stipulated Sum, as amended, and A201-2017, General Conditions of the Contract for Construction, as amended.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

DRAFT AIA® Document A101® - 2017

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the « » day of « » in the year « »
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

«Town of Ransom Canyon» « »
«24 Lee Kitchens Drive
Ransom Canyon, Texas 79366»
«806.829.2470 Phone»
« »

and the Contractor:
(Name, legal status, address and other information)

« » « »
« »
« »
« »

for the following Project:
(Name, location and detailed description)

«Jones-Warner Park Improvements»
«24 Lee Kitchens Dr.»
«Ransom Canyon, TX 79366»

The Architect:
(Name, legal status, address and other information)

«Parkhill»
«4222 85th Street
Lubbock, Texas 79423
806.473.2200 Phone
806.473.3500 Fax»

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101®-2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201®-2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.



ELECTRONIC COPYING of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS**
- 2 THE WORK OF THIS CONTRACT**
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION**
- 4 CONTRACT SUM**
- 5 PAYMENTS**
- 6 DISPUTE RESOLUTION**
- 7 TERMINATION OR SUSPENSION**
- 8 MISCELLANEOUS PROVISIONS**
- 9 ENUMERATION OF CONTRACT DOCUMENTS**

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:

(Check one of the following boxes.)

- « »** The date of this Agreement.
 - « »** A date set forth in a notice to proceed issued by the Owner.
 - « »** Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)
- « »**

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

(Check one of the following boxes and complete the necessary information.)

[« »] Not later than « » (« ») calendar days from the date of commencement of the Work.

[« »] By the following date: « »

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor’s performance of the Contract. The Contract Sum shall be « » (\$ « »), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement. (Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance

§ 4.3 Allowances, if any, included in the Contract Sum: (Identify each allowance.)

Item	Price

§ 4.4 Unit prices, if any: (Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)

§ 4.5 Liquidated damages, if any: (Insert terms and conditions for liquidated damages, if any.)

« Contractor agrees to pay the Owner \$250.00 per day as liquidated damages for each day the substantial completion of this project extends beyond the stipulated substantial completion date. »

§ 4.6 Other: (Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

« »

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

« »

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the « » day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the « » day of the « » month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than « » (« ») days after the Architect receives the Application for Payment.

(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- .5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

« »

§ 5.1.7.1.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

<< >>

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:
(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

<< >>

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:
(Insert any other conditions for release of retainage upon Substantial Completion.)

<< >>

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

§ 5.1.9 Except with the Owner’s prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor’s responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner’s final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect’s final Certificate for Payment, or as follows:

<< >>

§ 5.3 Interest

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

<< >> % << >>

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

<< >>

<< >>
<< >>
<< >>

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

Arbitration pursuant to Section 15.4 of AIA Document A201–2017

Litigation in a court of competent jurisdiction

Other *(Specify)*

<< >>

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner’s convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:

(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner’s convenience.)

<< >>

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner’s representative:

(Name, address, email address, and other information)

<< >>
<< >>
<< >>
<< >>
<< >>
<< >>

§ 8.3 The Contractor’s representative:

(Name, address, email address, and other information)

<< >>
<< >>
<< >>
<< >>

<< >>
<< >>

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™-2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™-2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201-2017, may be given in accordance with AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

(If other than in accordance with AIA Document E203-2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

<< >>

§ 8.7 Other provisions:

<< >>

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™-2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™-2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201™-2017, General Conditions of the Contract for Construction
- .4 **NOT USED**
- .5 Drawings

Number	Title	Date

- .6 Specifications

Section	Title	Date	Pages

- .7 Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

- .8 Other Exhibits:
(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

[] AIA Document E204™-2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017 incorporated into this Agreement.)

« »

[« »] The Sustainability Plan:

Title	Date	Pages

[« »] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

.9 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™-2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor’s bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

« »

This Agreement entered into as of the day and year first written above.

OWNER (Signature)

«Town of Ransom Canyon »« »

(Printed name and title)

CONTRACTOR (Signature)

« »« »

(Printed name and title)

DRAFT AIA® Document A201® - 2017

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

«Jones-Warner Park Improvements»

«24 Lee Kitchens Dr.»

«Ransom Canyon, TX 79366»

THE OWNER:

(Name, legal status and address)

«Town of Ransom Canyon»« »

«24 Lee Kitchens Drive

Ransom Canyon, Texas 79366»

«806.829.2470 Phone»

THE ARCHITECT:

(Name, legal status and address)

«Parkhill»

«4222 85th Street

Lubbock, Texas 79423

806.473.2200 Phone

806.473.3500 Fax»

TABLE OF ARTICLES

1	GENERAL PROVISIONS
2	OWNER
3	CONTRACTOR
4	ARCHITECT
5	SUBCONTRACTORS
6	CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
7	CHANGES IN THE WORK
8	TIME
9	PAYMENTS AND COMPLETION
10	PROTECTION OF PERSONS AND PROPERTY
11	INSURANCE AND BONDS
12	UNCOVERING AND CORRECTION OF WORK

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, *Guide for Supplementary Conditions*.



ELECTRONIC COPYING of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

- 13 MISCELLANEOUS PROVISIONS
- 14 TERMINATION OR SUSPENSION OF THE CONTRACT
- 15 CLAIMS AND DISPUTES



INDEX

(Topics and numbers in bold are Section headings.)

Acceptance of Nonconforming Work

9.6.6, 9.9.3, **12.3**

Acceptance of Work

9.6.6, 9.8.2, 9.9.3, 9.10.1, 9.10.3, 12.3

Access to Work

3.16, 6.2.1, 12.1

Accident Prevention

10

Acts and Omissions

3.2, 3.3.2, 3.12.8, 3.18, 4.2.3, 8.3.1, 9.5.1, 10.2.5,
10.2.8, 13.3.2, 14.1, 15.1.2, 15.2

Addenda

1.1.1

Additional Costs, Claims for

3.7.4, 3.7.5, 10.3.2, 15.1.5

Additional Inspections and Testing

9.4.2, 9.8.3, 12.2.1, **13.4**

Additional Time, Claims for

3.2.4, 3.7.4, 3.7.5, 3.10.2, 8.3.2, **15.1.6**

Administration of the Contract

3.1.3, **4.2**, 9.4, 9.5

Advertisement or Invitation to Bid

1.1.1

Aesthetic Effect

4.2.13

Allowances

3.8

Applications for Payment

4.2.5, 7.3.9, 9.2, **9.3**, 9.4, 9.5.1, 9.5.4, 9.6.3, 9.7, 9.10

Approvals

2.1.1, 2.3.1, 2.5, 3.1.3, 3.10.2, 3.12.8, 3.12.9,
3.12.10.1, 4.2.7, 9.3.2, 13.4.1

Arbitration

8.3.1, 15.3.2, **15.4**

ARCHITECT

4

Architect, Definition of

4.1.1

Architect, Extent of Authority

2.5, 3.12.7, 4.1.2, 4.2, 5.2, 6.3, 7.1.2, 7.3.4, 7.4, 9.2,
9.3.1, 9.4, 9.5, 9.6.3, 9.8, 9.10.1, 9.10.3, 12.1, 12.2.1,
13.4.1, 13.4.2, 14.2.2, 14.2.4, 15.1.4, 15.2.1

Architect, Limitations of Authority and
Responsibility

2.1.1, 3.12.4, 3.12.8, 3.12.10, 4.1.2, 4.2.1, 4.2.2,
4.2.3, 4.2.6, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 5.2.1, 7.4,
9.4.2, 9.5.4, 9.6.4, 15.1.4, 15.2

Architect's Additional Services and Expenses

2.5, 12.2.1, 13.4.2, 13.4.3, 14.2.4

Architect's Administration of the Contract

3.1.3, 3.7.4, 15.2, 9.4.1, 9.5

Architect's Approvals

2.5, 3.1.3, 3.5, 3.10.2, 4.2.7

Architect's Authority to Reject Work

3.5, 4.2.6, 12.1.2, 12.2.1

Architect's Copyright

1.1.7, 1.5

Architect's Decisions

3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 4.2.14, 6.3,
7.3.4, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4.1, 9.5, 9.8.4, 9.9.1,
13.4.2, 15.2

Architect's Inspections

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.8.3, **9.9.2**, **9.10.1**, 13.4

Architect's Instructions

3.2.4, 3.3.1, 4.2.6, 4.2.7, 13.4.2

Architect's Interpretations

4.2.11, 4.2.12

Architect's Project Representative

4.2.10

Architect's Relationship with Contractor

1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2,
3.5, 3.7.4, 3.7.5, 3.9.2, 3.9.3, 3.10, 3.11, 3.12, 3.16,
3.18, 4.1.2, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5,
9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3, **12**, **13.3.2**, 13.4, 15.2

Architect's Relationship with Subcontractors

1.1.2, 4.2.3, 4.2.4, 4.2.6, 9.6.3, 9.6.4, 11.3

Architect's Representations

9.4.2, 9.5.1, 9.10.1

Architect's Site Visits

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, **9.9.2**, **9.10.1**, 13.4

Asbestos

10.3.1

Attorneys' Fees

3.18.1, 9.6.8, 9.10.2, 10.3.3

Award of Separate Contracts

6.1.1, 6.1.2

Award of Subcontracts and Other Contracts for Portions of the Work

5.2

Basic Definitions

1.1

Bidding Requirements

1.1.1

Binding Dispute Resolution

8.3.1, 9.7, 11.5, 13.1, 15.1.2, 15.1.3, 15.2.1, 15.2.5,
15.2.6.1, 15.3.1, 15.3.2, 15.3.3, 15.4.1

Bonds, Lien

7.3.4.4, 9.6.8, 9.10.2, 9.10.3

Bonds, Performance, and Payment

7.3.4.4, 9.6.7, 9.10.3, **11.1.2**, 11.1.3, **11.5**

Building Information Models Use and Reliance

1.8

Building Permit

3.7.1

Capitalization

1.3

Certificate of Substantial Completion

9.8.3, 9.8.4, 9.8.5

Certificates for Payment

4.2.1, 4.2.5, 4.2.9, 9.3.3, **9.4**, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1, 9.10.3, 14.1.1.3, 14.2.4, 15.1.4

Certificates of Inspection, Testing or Approval
13.4.4

Certificates of Insurance
9.10.2

Change Orders

1.1.1, 3.4.2, 3.7.4, 3.8.2.3, 3.11, 3.12.8, 4.2.8, 5.2.3, 7.1.2, 7.1.3, **7.2**, 7.3.2, 7.3.7, 7.3.9, 7.3.10, 8.3.1, 9.3.1.1, 9.10.3, 10.3.2, 11.2, 11.5, 12.1.2

Change Orders, Definition of
7.2.1

CHANGES IN THE WORK

2.2.2, 3.11, 4.2.8, **7**, 7.2.1, 7.3.1, 7.4, 8.3.1, 9.3.1.1, 11.5

Claims, Definition of
15.1.1

Claims, Notice of
1.6.2, 15.1.3

CLAIMS AND DISPUTES

3.2.4, 6.1.1, 6.3, 7.3.9, 9.3.3, 9.10.4, 10.3.3, **15**, 15.4
Claims and Timely Assertion of Claims
15.4.1

Claims for Additional Cost

3.2.4, 3.3.1, 3.7.4, 7.3.9, 9.5.2, 10.2.5, 10.3.2, **15.1.5**

Claims for Additional Time

3.2.4, 3.3.1, 3.7.4, 6.1.1, 8.3.2, 9.5.2, 10.3.2, **15.1.6**

Concealed or Unknown Conditions, Claims for 3.7.4

Claims for Damages
3.2.4, 3.18, 8.3.3, 9.5.1, 9.6.7, 10.2.5, 10.3.3, 11.3, 11.3.2, 14.2.4, 15.1.7

Claims Subject to Arbitration
15.4.1

Cleaning Up

3.15, 6.3

Commencement of the Work, Conditions Relating to
2.2.1, 3.2.2, 3.4.1, 3.7.1, 3.10.1, 3.12.6, 5.2.1, 5.2.3, 6.2.2, 8.1.2, 8.2.2, 8.3.1, 11.1, 11.2, **15.1.5**

Commencement of the Work, Definition of
8.1.2

Communications

3.9.1, **4.2.4**

Completion, Conditions Relating to
3.4.1, 3.11, 3.15, 4.2.2, 4.2.9, 8.2, 9.4.2, 9.8, 9.9.1, 9.10, 12.2, 14.1.2, 15.1.2

COMPLETION, PAYMENTS AND 9

Completion, Substantial
3.10.1, 4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3, 12.2, 15.1.2

Compliance with Laws

2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 10.2.2, 13.1, 13.3, 13.4.1, 13.4.2, 13.5, 14.1.1, 14.2.1.3, 15.2.8, 15.4.2, 15.4.3

Concealed or Unknown Conditions

3.7.4, 4.2.8, 8.3.1, 10.3

Conditions of the Contract

1.1.1, 6.1.1, 6.1.4

Consent, Written

3.4.2, 3.14.2, 4.1.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3, 13.2, 15.4.4.2

Consolidation or Joinder

15.4.4

CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

1.1.4, **6**

Construction Change Directive, Definition of
7.3.1

Construction Change Directives

1.1.1, 3.4.2, 3.11, 3.12.8, 4.2.8, 7.1.1, 7.1.2, 7.1.3, **7.3**, 9.3.1.1

Construction Schedules, Contractor's

3.10, 3.11, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2

Contingent Assignment of Subcontracts

5.4, 14.2.2.2

Continuing Contract Performance

15.1.4

Contract, Definition of

1.1.2

CONTRACT, TERMINATION OR SUSPENSION OF THE

5.4.1.1, 5.4.2, 11.5, **14**

Contract Administration

3.1.3, 4, 9.4, 9.5

Contract Award and Execution, Conditions Relating to

3.7.1, 3.10, 5.2, 6.1

Contract Documents, Copies Furnished and Use of
1.5.2, 2.3.6, 5.3

Contract Documents, Definition of

1.1.1

Contract Sum

2.2.2, 2.2.4, 3.7.4, 3.7.5, 3.8, 3.10.2, 5.2.3, 7.3, 7.4, **9.1**, 9.2, 9.4.2, 9.5.1.4, 9.6.7, 9.7, 10.3.2, 11.5, 12.1.2, 12.3, 14.2.4, 14.3.2, 15.1.4.2, **15.1.5**, **15.2.5**

Contract Sum, Definition of

9.1

Contract Time

1.1.4, 2.2.1, 2.2.2, 3.7.4, 3.7.5, 3.10.2, 5.2.3, 6.1.5, 7.2.1.3, 7.3.1, 7.3.5, 7.3.6, 7, 7, 7.3.10, 7.4, 8.1.1, 8.2.1, 8.2.3, 8.3.1, 9.5.1, 9.7, 10.3.2, 12.1.1, 12.1.2, 14.3.2, 15.1.4.2, 15.1.6.1, 15.2.5

Contract Time, Definition of

8.1.1

CONTRACTOR

3

Contractor, Definition of

3.1, **6.1.2**

Contractor's Construction and Submittal Schedules

3.10, 3.12.1, 3.12.2, 4.2.3, 6.1.3, 15.1.6.2

Contractor's Employees
2.2.4, 3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6,
10.2, 10.3, 11.3, 14.1, 14.2.1.1

Contractor's Liability Insurance
11.1
Contractor's Relationship with Separate Contractors
and Owner's Forces
3.12.5, 3.14.2, 4.2.4, 6, 11.3, 12.2.4
Contractor's Relationship with Subcontractors
1.2.2, 2.2.4, 3.3.2, 3.18.1, 3.18.2, 4.2.4, 5, 9.6.2,
9.6.7, 9.10.2, 11.2, 11.3, 11.4
Contractor's Relationship with the Architect
1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2,
3.5.1, 3.7.4, 3.10, 3.11, 3.12, 3.16, 3.18, 4.2, 5.2,
6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6,
10.3, 11.3, 12, 13.4, 15.1.3, 15.2.1
Contractor's Representations
3.2.1, 3.2.2, 3.5, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.8.2
Contractor's Responsibility for Those Performing the
Work
3.3.2, 3.18, 5.3, 6.1.3, 6.2, 9.5.1, 10.2.8
Contractor's Review of Contract Documents
3.2
Contractor's Right to Stop the Work
2.2.2, 9.7
Contractor's Right to Terminate the Contract
14.1
Contractor's Submittals
3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 9.2, 9.3, 9.8.2,
9.8.3, 9.9.1, 9.10.2, 9.10.3
Contractor's Superintendent
3.9, 10.2.6
Contractor's Supervision and Construction
Procedures
1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4,
7.1.3, 7.3.4, 7.3.6, 8.2, 10, 12, 14, 15.1.4
Coordination and Correlation
1.2, 3.2.1, 3.3.1, 3.10, 3.12.6, 6.1.3, 6.2.1
Copies Furnished of Drawings and Specifications
1.5, 2.3.6, 3.11
Copyrights
1.5, **3.17**
Correction of Work
2.5, 3.7.3, 9.4.2, 9.8.2, 9.8.3, 9.9.1, 12.1.2, **12.2**, 12.3,
15.1.3.1, 15.1.3.2, 15.2.1

Correlation and Intent of the Contract Documents
1.2
Cost, Definition of
7.3.4
Costs
2.5, 3.2.4, 3.7.3, 3.8.2, 3.15.2, 5.4.2, 6.1.1, 6.2.3,
7.3.3.3, 7.3.4, 7.3.8, 7.3.9, 9.10.2, 10.3.2, 10.3.6,
11.2, 12.1.2, 12.2.1, 12.2.4, 13.4, 14

Cutting and Patching
3.14, 6.2.5

Damage to Construction of Owner or Separate
Contractors
3.14.2, 6.2.4, 10.2.1.2, 10.2.5, 10.4, 12.2.4
Damage to the Work
3.14.2, 9.9.1, 10.2.1.2, 10.2.5, 10.4, 12.2.4
Damages, Claims for
3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.3.2,
11.3, 14.2.4, 15.1.7
Damages for Delay
6.2.3, 8.3.3, 9.5.1.6, 9.7, 10.3.2, 14.3.2

Date of Commencement of the Work, Definition of
8.1.2
Date of Substantial Completion, Definition of
8.1.3
Day, Definition of
8.1.4
Decisions of the Architect
3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 6.3, 7.3.4,
7.3.9, 8.1.3, 8.3.1, 9.2, 9.4, 9.5.1, 9.8.4, 9.9.1, 13.4.2,
14.2.2, 14.2.4, 15.1, 15.2

Decisions to Withhold Certification
9.4.1, **9.5**, 9.7, 14.1.1.3
Defective or Nonconforming Work, Acceptance,
Rejection and Correction of
2.5, 3.5, 4.2.6, 6.2.3, 9.5.1, 9.5.3, 9.6.6, 9.8.2, 9.9.3,
9.10.4, 12.2.1
Definitions
1.1, 2.1.1, 3.1.1, 3.5, 3.12.1, 3.12.2, 3.12.3, 4.1.1, 5.1,
6.1.2, 7.2.1, 7.3.1, 8.1, 9.1, 9.8.1, 15.1.1

Delays and Extensions of Time
3.2, **3.7.4**, 5.2.3, 7.2.1, 7.3.1, **7.4**, **8.3**, 9.5.1, **9.7**,
10.3.2, **10.4**, 14.3.2, **15.1.6**, 15.2.5

Digital Data Use and Transmission
1.7
Disputes
6.3, 7.3.9, 15.1, 15.2

Documents and Samples at the Site
3.11
Drawings, Definition of
1.1.5
Drawings and Specifications, Use and Ownership of
3.11
Effective Date of Insurance
8.2.2

Emergencies
10.4, 14.1.1.2, **15.1.5**
Employees, Contractor's
3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2,
10.3.3, 11.3, 14.1, 14.2.1.1
Equipment, Labor, or Materials
1.1.3, 1.1.6, 3.4, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,
4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3,
9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2
Execution and Progress of the Work
1.1.3, 1.2.1, 1.2.2, 2.3.4, 2.3.6, 3.1, 3.3.1, 3.4.1, 3.7.1,
3.10.1, 3.12, 3.14, 4.2, 6.2.2, 7.1.3, 7.3.6, 8.2, 9.5.1,
9.9.1, 10.2, 10.3, 12.1, 12.2, 14.2, 14.3.1, 15.1.4

Extensions of Time
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3, 7.4, 9.5.1, 9.7, 10.3.2,
10.4, 14.3, 15.1.6, **15.2.5**

Failure of Payment
9.5.1.3, **9.7**, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2

Faulty Work
(See Defective or Nonconforming Work)

Final Completion and Final Payment
4.2.1, 4.2.9, 9.8.2, **9.10**, 12.3, 14.2.4, 14.4.3

Financial Arrangements, Owner's
2.2.1, 13.2.2, 14.1.1.4

GENERAL PROVISIONS

1

Governing Law

13.1
Guarantees (See Warranty)

Hazardous Materials and Substances
10.2.4, **10.3**
Identification of Subcontractors and Suppliers
5.2.1

Indemnification
3.17, **3.18**, 9.6.8, 9.10.2, 10.3.3, 11.3

Information and Services Required of the Owner
2.1.2, **2.2**, 2.3, 3.2.2, 3.12.10.1, 6.1.3, 6.1.4, 6.2.5,
9.6.1, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1, 13.4.2,
14.1.1.4, 14.1.4, 15.1.4

Initial Decision

15.2
Initial Decision Maker, Definition of
1.1.8
Initial Decision Maker, Decisions
14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5
Initial Decision Maker, Extent of Authority
14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5

Injury or Damage to Person or Property
10.2.8, 10.4

Inspections
3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3,
9.9.2, 9.10.1, 12.2.1, 13.4

Instructions to Bidders
1.1.1

Instructions to the Contractor
3.2.4, 3.3.1, 3.8.1, 5.2.1, 7, 8.2.2, 12, 13.4.2

Instruments of Service, Definition of

1.1.7
Insurance
6.1.1, 7.3.4, 8.2.2, 9.3.2, 9.8.4, 9.9.1, 9.10.2, 10.2.5,

11
Insurance, Notice of Cancellation or Expiration
11.1.4, 11.2.3

Insurance, Contractor's Liability

11.1
Insurance, Effective Date of
8.2.2, 14.4.2

Insurance, Owner's Liability

11.2

Insurance, Property
10.2.5, 11.2, 11.4, 11.5

Insurance, Stored Materials
9.3.2

INSURANCE AND BONDS

11
Insurance Companies, Consent to Partial Occupancy
9.9.1
Insured loss, Adjustment and Settlement of
11.5
Intent of the Contract Documents
1.2.1, 4.2.7, 4.2.12, 4.2.13

Interest

13.5

Interpretation
1.1.8, 1.2.3, **1.4**, 4.1.1, 5.1, 6.1.2, 15.1.1
Interpretations, Written
4.2.11, 4.2.12
Judgment on Final Award
15.4.2

Labor and Materials, Equipment
1.1.3, 1.1.6, **3.4**, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,
5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1,
10.2.4, 14.2.1.1, 14.2.1.2
Labor Disputes
8.3.1
Laws and Regulations
1.5, 2.3.2, 3.2.3, 3.2.4, 3.6, 3.7, 3.12.10, 3.13, 9.6.4,
9.9.1, 10.2.2, 13.1, 13.3.1, 13.4.2, 13.5, 14, 15.2.8,
15.4
Liens
2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8
Limitations, Statutes of
12.2.5, 15.1.2, 15.4.1.1
Limitations of Liability
3.2.2, 3.5, 3.12.10, 3.12.10.1, 3.17, 3.18.1, 4.2.6,
4.2.7, 6.2.2, 9.4.2, 9.6.4, 9.6.7, 9.6.8, 10.2.5, 10.3.3,
11.3, 12.2.5, 13.3.1
Limitations of Time
2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2.7,
5.2, 5.3, 5.4.1, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3,
9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14, 15,
15.1.2, 15.1.3, 15.1.5

Materials, Hazardous
10.2.4, **10.3**
Materials, Labor, Equipment and
1.1.3, 1.1.6, 3.4.1, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,
5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2,
10.2.1.2, 10.2.4, 14.2.1.1, 14.2.1.2
Means, Methods, Techniques, Sequences and
Procedures of Construction
3.3.1, 3.12.10, 4.2.2, 4.2.7, 9.4.2
Mechanic's Lien
2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8

Mediation
8.3.1, 15.1.3.2, 15.2.1, 15.2.5, 15.2.6, **15.3**, 15.4.1,
15.4.1.1

Minor Changes in the Work

1.1.1, 3.4.2, 3.12.8, 4.2.8, 7.1, 7.4

MISCELLANEOUS PROVISIONS

13

Modifications, Definition of

1.1.1

Modifications to the Contract

1.1.1, 1.1.2, 2.5, 3.11, 4.1.2, 4.2.1, 5.2.3, 7, 8.3.1, 9.7, 10.3.2

Mutual Responsibility

6.2

Nonconforming Work, Acceptance of

9.6.6, 9.9.3, **12.3**

Nonconforming Work, Rejection and Correction of
2.4, 2.5, 3.5, 4.2.6, 6.2.4, 9.5.1, 9.8.2, 9.9.3, 9.10.4, 12.2

Notice

1.6, 1.6.1, 1.6.2, 2.1.2, 2.2.2., 2.2.3, 2.2.4, 2.5, 3.2.4, 3.3.1, 3.7.4, 3.7.5, 3.9.2, 3.12.9, 3.12.10, 5.2.1, 7.4, 8.2.2, 9.6.8, 9.7, 9.10.1, 10.2.8, 10.3.2, 11.5, 12.2.2.1, 13.4.1, 13.4.2, 14.1, 14.2.2, 14.4.2, 15.1.3, 15.1.5, 15.1.6, 15.4.1

Notice of Cancellation or Expiration of Insurance

11.1.4, 11.2.3

Notice of Claims

1.6.2, 2.1.2, 3.7.4, 9.6.8, 10.2.8, **15.1.3**, 15.1.5, 15.1.6, 15.2.8, 15.3.2, 15.4.1

Notice of Testing and Inspections

13.4.1, 13.4.2

Observations, Contractor's

3.2, 3.7.4

Occupancy

2.3.1, 9.6.6, 9.8

Orders, Written

1.1.1, 2.4, 3.9.2, 7, 8.2.2, 11.5, 12.1, 12.2.2.1, 13.4.2, 14.3.1

OWNER

2

Owner, Definition of

2.1.1

Owner, Evidence of Financial Arrangements

2.2, 13.2.2, 14.1.1.4

Owner, Information and Services Required of the

2.1.2, **2.2**, 2.3, 3.2.2, 3.12.10, 6.1.3, 6.1.4, 6.2.5, 9.3.2, 9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1, 13.4.2, 14.1.1.4, 14.1.4, 15.1.4

Owner's Authority

1.5, 2.1.1, 2.3.32.4, 2.5, 3.4.2, 3.8.1, 3.12.10, 3.14.2, 4.1.2, 4.2.4, 4.2.9, 5.2.1, 5.2.4, 5.4.1, 6.1, 6.3, 7.2.1, 7.3.1, 8.2.2, 8.3.1, 9.3.2, 9.5.1, 9.6.4, 9.9.1, 9.10.2, 10.3.2, 11.4, 11.5, 12.2.2, 12.3, 13.2.2, 14.3, 14.4, 15.2.7

Owner's Insurance

11.2

Owner's Relationship with Subcontractors

1.1.2, 5.2, 5.3, 5.4, 9.6.4, 9.10.2, 14.2.2

Owner's Right to Carry Out the Work

2.5, 14.2.2

Owner's Right to Clean Up

6.3

Owner's Right to Perform Construction and to Award Separate Contracts

6.1

Owner's Right to Stop the Work

2.4

Owner's Right to Suspend the Work

14.3

Owner's Right to Terminate the Contract

14.2, 14.4

Ownership and Use of Drawings, Specifications and Other Instruments of Service

1.1.1, 1.1.6, 1.1.7, **1.5**, 2.3.6, 3.2.2, 3.11, 3.17, 4.2.12, 5.3

Partial Occupancy or Use

9.6.6, **9.9**

Patching, Cutting and

3.14, 6.2.5

Patents

3.17

Payment, Applications for

4.2.5, 7.3.9, 9.2, **9.3**, 9.4, 9.5, 9.6.3, 9.7, 9.8.5, 9.10.1, 14.2.3, 14.2.4, 14.4.3

Payment, Certificates for

4.2.5, 4.2.9, 9.3.3, **9.4**, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1, 9.10.3, 14.1.1.3, 14.2.4

Payment, Failure of

9.5.1.3, **9.7**, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2

Payment, Final

4.2.1, 4.2.9, **9.10**, 12.3, 14.2.4, 14.4.3

Payment Bond, Performance Bond and

7.3.4.4, 9.6.7, 9.10.3, **11.1.2**

Payments, Progress

9.3, **9.6**, 9.8.5, 9.10.3, 14.2.3, 15.1.4

PAYMENTS AND COMPLETION

9

Payments to Subcontractors

5.4.2, 9.5.1.3, 9.6.2, 9.6.3, 9.6.4, 9.6.7, 14.2.1.2

PCB

10.3.1

Performance Bond and Payment Bond

7.3.4.4, 9.6.7, 9.10.3, **11.1.2**

Permits, Fees, Notices and Compliance with Laws

2.3.1, **3.7**, 3.13, 7.3.4.4, 10.2.2

PERSONS AND PROPERTY, PROTECTION OF

10

Polychlorinated Biphenyl

10.3.1

Product Data, Definition of

3.12.2

Product Data and Samples, Shop Drawings

3.11, **3.12**, 4.2.7

Progress and Completion

4.2.2, **8.2**, 9.8, 9.9.1, 14.1.4, 15.1.4

Progress Payments

9.3, **9.6**, 9.8.5, 9.10.3, 14.2.3, 15.1.4

Project, Definition of

1.1.4

Project Representatives

4.2.10

Property Insurance

10.2.5, **11.2**

Proposal Requirements

1.1.1

PROTECTION OF PERSONS AND PROPERTY **10**

Regulations and Laws

1.5, 2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 9.9.1, 10.2.2, 13.1, 13.3, 13.4.1, 13.4.2, 13.5, 14, 15.2.8, 15.4

Rejection of Work

4.2.6, 12.2.1

Releases and Waivers of Liens

9.3.1, 9.10.2

Representations

3.2.1, 3.5, 3.12.6, 8.2.1, 9.3.3, 9.4.2, 9.5.1, 9.10.1

Representatives

2.1.1, 3.1.1, 3.9, 4.1.1, 4.2.10, 13.2.1

Responsibility for Those Performing the Work

3.3.2, 3.18, 4.2.2, 4.2.3, 5.3, 6.1.3, 6.2, 6.3, 9.5.1, 10

Retainage

9.3.1, 9.6.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3

Review of Contract Documents and Field

Conditions by Contractor

3.2, 3.12.7, 6.1.3

Review of Contractor's Submittals by Owner and Architect

3.10.1, 3.10.2, 3.11, 3.12, 4.2, 5.2, 6.1.3, 9.2, 9.8.2

Review of Shop Drawings, Product Data and

Samples by Contractor

3.12

Rights and Remedies

1.1.2, 2.4, 2.5, 3.5, 3.7.4, 3.15.2, 4.2.6, 5.3, 5.4, 6.1, 6.3, 7.3.1, 8.3, 9.5.1, 9.7, 10.2.5, 10.3, 12.2.1, 12.2.2, 12.2.4, **13.3**, 14, 15.4

Royalties, Patents and Copyrights

3.17

Rules and Notices for Arbitration

15.4.1

Safety of Persons and Property

10.2, 10.4

Safety Precautions and Programs

3.3.1, 4.2.2, 4.2.7, 5.3, **10.1**, 10.2, 10.4

Samples, Definition of

3.12.3

Samples, Shop Drawings, Product Data and

3.11, **3.12**, 4.2.7

Samples at the Site, Documents and

3.11

Schedule of Values

9.2, 9.3.1

Schedules, Construction

3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2

Separate Contracts and Contractors

1.1.4, 3.12.5, 3.14.2, 4.2.4, 4.2.7, 6, 8.3.1, 12.1.2

Separate Contractors, Definition of

6.1.1

Shop Drawings, Definition of

3.12.1

Shop Drawings, Product Data and Samples

3.11, **3.12**, 4.2.7

Site, Use of

3.13, 6.1.1, 6.2.1

Site Inspections

3.2.2, 3.3.3, 3.7.1, 3.7.4, 4.2, 9.9.2, 9.4.2, 9.10.1, 13.4

Site Visits, Architect's

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4

Special Inspections and Testing

4.2.6, 12.2.1, 13.4

Specifications, Definition of

1.1.6

Specifications

1.1.1, **1.1.6**, 1.2.2, 1.5, 3.12.10, 3.17, 4.2.14

Statute of Limitations

15.1.2, 15.4.1.1

Stopping the Work

2.2.2, 2.4, 9.7, 10.3, 14.1

Stored Materials

6.2.1, 9.3.2, 10.2.1.2, 10.2.4

Subcontractor, Definition of

5.1.1

SUBCONTRACTORS

5

Subcontractors, Work by

1.2.2, 3.3.2, 3.12.1, 3.18, 4.2.3, 5.2.3, 5.3, 5.4, 9.3.1.2, 9.6.7

Subcontractual Relations

5.3, 5.4, 9.3.1.2, 9.6, 9.10, 10.2.1, 14.1, 14.2.1

Submittals

3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 7.3.4, 9.2, 9.3, 9.8, 9.9.1, 9.10.2, 9.10.3

Submittal Schedule

3.10.2, 3.12.5, 4.2.7

Subrogation, Waivers of

6.1.1, **11.3**

Substances, Hazardous

10.3

Substantial Completion

4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, **9.8**, 9.9.1, 9.10.3, 12.2, 15.1.2

Substantial Completion, Definition of

9.8.1

Substitution of Subcontractors

5.2.3, 5.2.4

Substitution of Architect

2.3.3

Substitutions of Materials
3.4.2, 3.5, 7.3.8
Sub-subcontractor, Definition of
5.1.2
Subsurface Conditions
3.7.4
Successors and Assigns
13.2
Superintendent
3.9, 10.2.6
Supervision and Construction Procedures
1.2.2, **3.3**, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4,
7.1.3, 7.3.4, 8.2, 8.3.1, 9.4.2, 10, 12, 14, 15.1.4
Suppliers
1.5, 3.12.1, 4.2.4, 4.2.6, 5.2.1, 9.3, 9.4.2, 9.5.4, 9.6,
9.10.5, 14.2.1
Surety
5.4.1.2, 9.6.8, 9.8.5, 9.10.2, 9.10.3, 11.1.2, 14.2.2,
15.2.7
Surety, Consent of
9.8.5, 9.10.2, 9.10.3
Surveys
1.1.7, 2.3.4
Suspension by the Owner for Convenience
14.3
Suspension of the Work
3.7.5, 5.4.2, 14.3
Suspension or Termination of the Contract
5.4.1.1, 14
Taxes
3.6, 3.8.2.1, 7.3.4.4
Termination by the Contractor
14.1, 15.1.7
Termination by the Owner for Cause
5.4.1.1, **14.2**, 15.1.7
Termination by the Owner for Convenience
14.4
Termination of the Architect
2.3.3
Termination of the Contractor Employment
14.2.2

TERMINATION OR SUSPENSION OF THE CONTRACT
14
Tests and Inspections
3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3,
9.9.2, 9.10.1, 10.3.2, 12.2.1, **13.4**
TIME
8
Time, Delays and Extensions of
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, **8.3**, 9.5.1, 9.7,
10.3.2, 10.4, 14.3.2, 15.1.6, 15.2.5

Time Limits
2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2,
5.2, 5.3, 5.4, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3,
9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14,
15.1.2, 15.1.3, 15.4
Time Limits on Claims
3.7.4, 10.2.8, 15.1.2, 15.1.3
Title to Work
9.3.2, 9.3.3
UNCOVERING AND CORRECTION OF WORK
12
Uncovering of Work
12.1
Unforeseen Conditions, Concealed or Unknown
3.7.4, 8.3.1, 10.3
Unit Prices
7.3.3.2, 9.1.2
Use of Documents
1.1.1, 1.5, 2.3.6, 3.12.6, 5.3
Use of Site
3.13, 6.1.1, 6.2.1
Values, Schedule of
9.2, 9.3.1
Waiver of Claims by the Architect
13.3.2
Waiver of Claims by the Contractor
9.10.5, 13.3.2, **15.1.7**
Waiver of Claims by the Owner
9.9.3, 9.10.3, 9.10.4, 12.2.2.1, 13.3.2, 14.2.4, **15.1.7**
Waiver of Consequential Damages
14.2.4, 15.1.7
Waiver of Liens
9.3, 9.10.2, 9.10.4
Waivers of Subrogation
6.1.1, **11.3**
Warranty
3.5, 4.2.9, 9.3.3, 9.8.4, 9.9.1, 9.10.2, 9.10.4, 12.2.2,
15.1.2
Weather Delays
8.3, 15.1.6.2
Work, Definition of
1.1.3
Written Consent
1.5.2, 3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.10.3,
13.2, 13.3.2, 15.4.4.2
Written Interpretations
4.2.11, 4.2.12
Written Orders
1.1.1, 2.4, 3.9, 7, 8.2.2, 12.1, 12.2, 13.4.2, 14.3.1

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement, as amended, between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.1.9 Project Manual

The Project Manual is an assembled publication for the Work which may include the bidding and/or proposal requirements, sample forms, Conditions of the Contract and Specifications.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.2.4 The mention of certain items in the Specifications to the exclusion of others (whether in the general statement of the Work in a section or paragraph or in itemized lists of any nature); or the mention of Work to be done in a specific area to the exclusion of similar or like Work required in other areas; or the failure to properly cross-reference related Work specified elsewhere, shall not relieve the Contractor of his responsibilities under the Contract Documents.

§ 1.2.5 The specifications titles of sections and paragraphs are not necessarily fully descriptive of the work required thereby. The segregation of the various parts of the Work under headings, by trades, does not relieve the Contractor of the responsibility for furnishing every item shown on the drawings or specified in the specifications, or reasonably inferable therefrom as being necessary to produce the intended results, whether properly segregated or not.

§ 1.2.6 If an item is addressed differently in two places of the contract documents the greater quality or quantity applies and is assumed to take precedence.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may

not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™-2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract

Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services

made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.2.5 The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies or omissions discovered shall be reported to the Architect at once.

§ 3.2.6 The Contractor shall satisfy itself as to the accuracy of grades, elevations, dimensions and locations. In cases of interconnection of Work with existing or other work, it shall verify at the site, dimensions relating to such existing or other work.

§ 3.2.7 The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for evaluating and responding to the Contractor's requests for information that are not prepared in accordance with the Contract Documents or where the requested information is available to the Contractor from a careful study and comparison of the Contractor Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, or prior Project correspondence or documentation.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.3.4 The Contractor shall bear full responsibility for design and execution of acceptable trenching and shoring procedures, in accordance with Texas Health & Safety Code section 756.021 *et seq.* To the extent that any portion of the Work requires a trench excavation exceeding five (5) feet in depth, in accordance with Texas Health and Safety Code Section 756.023(a), Contractor shall fully comply, and shall require any applicable subcontractor to comply, with:

- .1 The Occupational Safety and Health Administration standards for trench safety in effect for Construction of the Work;
- .2 The special shoring requirements, if any, of the Owner; and
- .3 Any geotechnical information obtained by Owner for use by the Contractor in the design of the trench safety system.
- .4 Trench excavation safety protection shall be a separate line item on the Application for Payment and based on linear feet of trench excavated. Special shoring requirements shall be a separate pay item, and shall be based on the square feet of shoring used. Said costs shall be included within the Guaranteed Maximum Price.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them. The Contractor shall not employ or subcontract with any persons (including, but not limited to, the project superintendent) or an entity to which the Owner shall reasonably object.

§ 3.4.4 After the Contract has been executed, the Owner and Architect will consider requests for the substitution of materials and products in place of those specified only under the conditions set forth in the Division 01 - General Requirements of the Specifications. By making requests for substitutions, the Contractor:

- .1 represents that it has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
- .2 represents that it will provide the same warranty for the substitution as it would have provided for the product specified;
- .3 certifies that the cost data presented is complete and includes all related costs for the substituted product and for Work that must be changed as a result of the substitution, except for the Architect's redesign costs, and waives all claims for additional costs related to the substitution that subsequently become apparent; and
- .4 shall coordinate the installation of the accepted substitute, making such changes as may be required for the Work to complete in all respects

§ 3.4.5. The Owner shall be entitled to reimbursement from the Contractor for amounts paid to the Architect for reviewing the Contractor's proposed substitutions and making agreed-upon changes in the Drawings and Specifications resulting from such substitutions.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes, or portions thereof, for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing, or where he reasonably should have known, it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.4.1 The concealed or unknown conditions encountered below the surface of the ground shall apply to man-made conditions only. The materials to be excavated shall be considered as unclassified and the Contractor shall assume responsibility for excavating to the depths and limits required by the Contract Documents unless otherwise directed by the Architect, in which case the unit prices (if any) stated in the Contract Documents or subsequently agreed upon shall apply.

§ 3.7.4.2 Failure of the drawings to show underground utility lines or other concealed piping, wiring and the like shall not be construed as a guarantee on the part of the Architect or the Owner that such conditions do not exist, though unknown. All operations involving excavation or removals shall be done at the risk of the Contractor who shall take the necessary precautions to protect employees and the public from injury or death and to avoid damage to existing systems.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work, and in full cooperation with any other Contractors who may be on the Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.12.11 The Architect's review of Contractor's submittals will be limited to examination of an initial submittal and one (1) resubmittal. The Owner is entitled to obtain reimbursement from the contractor for amounts paid to the Architect for evaluation of additional resubmittals.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce

other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site observations to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.2.1 The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for site visits made necessary by the fault of the Contractor or by defects and deficiencies in the Work.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

§ 4.2.15 Contractor's requests for information shall be prepared and submitted in accordance with Division 01 - General Requirements of the Project Manual on the form included in the Contract Documents or if not included, on

AIA Document G716-2004. The Architect will return without action requests for information that do not conform to requirements of the Contract Documents.

§ 4.2.16 Where "as directed," "as directed by Architect," or similar notion appears in the Contract Documents, the Contractor shall ask for and receive the necessary instruction from the Architect before proceeding with that portion of the Work. Requests for instructions shall be made in ample time to avoid delays in the Work.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.1.1 If required by the Architect, the Contractor shall submit evidence that the person or entity he proposes to use are competent, have had experience and have performed satisfactorily on jobs of similar size, complexity, type and scope. The information, if required, shall give complete experience records of the proposed person or entity which shall include:

Name of Job	Type of Job	General Contractor	Architect	Date Completed	Approximate Cost of subcontract

§ 5.2.1.2 The acceptance of a person or entity (including those who are to furnish materials or equipment fabricated to a special design) shall not constitute approval of the materials they customarily handle, unless the materials are acceptable to the Architect as being equal to those specified in quality, function, performance and appearance. The Architect shall be the sole judge as to acceptability of the materials as to appearance.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive, , Construction Change Request or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order or , Construction Change Request shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, , Construction Change Request or order for a minor change in the Work.

§ 7.1.4 The combined markup for overhead and profit included in the total cost to the Owner for a change in the Work shall be based on the following schedule:

- .1 For the Contractor, for Work performed by the Contractor's own forces, ten (10) percent of the cost.
- .2 For the Contractor, for Work performed by the Contractor's Subcontractors, five (5) percent of the amount due the Subcontractors.

- .3 For each Subcontractor involved, for Work performed by that Subcontractor's own forces, ten (10) percent of the cost.
- .4 For each Subcontractor involved, for Work performed by the Subcontractor's Sub-subcontractors, five (5) percent of the amount due the Sub-subcontractor.
- .5 Cost to which overhead and profit is to be applied shall be determined in accordance with Section 7.3.4.
- .6 In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also. In no case will a change be approved without such itemization.

§ 7.1.5 In cases where changes in the work result in a credit to the Owner, the credit shall include direct costs for overhead, bonds, insurance and profit. In cases where a change in the Work results in both credits and charges to the Owner, the Contractor will be allowed to add the overhead and profit percentages indicated in 7.1.4 to the net change.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time. To permit evaluation, any request for a time extension must be justified and presented in adequate detail, showing the cause and how proposed change will delay the final contract completion date.

§ 7.2.2 In responding to a request for a proposed price for a change in the work, or in submitting a claim, the Contractor shall furnish a lump sum proposal supported by a complete breakdown as described in subparagraph 7.1.4, indicating the estimated or actual cost to the Contractor for performance of the changed work, including the applicable percentage of overhead and profit described in subparagraph 7.1.4.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term “day” as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor’s control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor’s Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor’s subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor’s right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.1.3 Until Substantial Completion, the Owner will pay ninety-five percent (95%) of the amount due the Contractor on account of progress payments.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.2.1 In preparing the Application for Payment, the Contractor shall verify the accuracy of the requests for payment submitted by his Subcontractors and materials suppliers and shall not include in his Application for Payment any sum which, in his opinion, if approved will result in an overpayment for their work performed or materials delivered.

§ 9.3.2.2 All items which are shipped in crates or otherwise wrapped shall be uncrated or unwrapped and inspected by the Contractor upon arrival at the site. Materials shall be carefully inspected for quantities, sizes and color, if color selection is a consideration, damage, or defects; and if damaged, defective, or otherwise not in conformance with the Contract Documents, shall be recorded immediately.

§ 9.3.2.3 The Contractor shall not request payment for any items until he has inspected the items and any materials which are not in conformance with the contract documents shall not be included in any Application for Payment.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and supplier's amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.3.1 The Architect will perform no more than two (2) inspections to determine whether the Work or a designated portion thereof has attained Substantial Completion in accordance with the Contract Documents. The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for any additional inspections.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the

Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final observation and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such observation. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and observations, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.1.1 The Architect will perform no more than two (2) inspections to determine whether the work or a designated portion thereof has attained Final Completion in accordance with Contract Documents. The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for any additional inspections.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the

Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.2.1 As a prerequisite to final payment, the Contractor shall submit the following items to the Architect, properly executed.

- .1 AIA Document G706 "Contractor's Affidavit of Payment of Debts and Claims".
- .2 AIA Document G706A "Contractor's Affidavit of Release of Liens", conditional upon receipt of final payment.
- .3 AIA Document G707 "Consent of Surety Company to Final Payment" along with Contractor's Release or Waiver of Lien (conditional upon receipt of final payment and Separate Releases or Waiver of Liens from all subcontractors and all suppliers).
- .4 Written Guarantee by Contractor and each Subcontractor that work will be free of defects in materials and workmanship for a period of one year from date of Substantial Completion, except as otherwise specified.

§ 9.10.2.2 Waiver of Lien; It is distinctly understood that by virtue of this Contract no mechanic, Contractor, material man, artisan or laborer, whether skilled or unskilled, shall ever in any manner have, claim, or acquire any lien upon the house, building or any of the improvements of whatever nature or kind so erected or to be erected by virtue of this Contract, nor upon any of the land upon which said house or any of the improvements are so erected, built or situated. Although the law clearly states that no entity may place a lien on this building or property, the Owner requires release and waivers of liens as required in other portions of this Contract.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

§ 9.11.1 It is hereby understood and mutually agreed, by and between the Contractor, the Contractor's surety, and Owner, that the beginning date and the Contract Time for completion of the Work are essential conditions of the Contract. The Contractor agrees that the Work will be prosecuted regularly and diligently at such rate of progress as will insure full completion thereof within the specified time as agreed upon and set forth in the Contract.

§ 9.11.2 If the Contractor shall neglect, fail or refuse to complete the Work within the Contract Time specified and achieve Substantial Completion, or any proper extension thereof granted by the Owner, then the Contractor and the Contractor's surety will be liable for and does hereby agree to pay to the Owner the sum of Two Hundred Fifty Dollars (\$250.00), not as a penalty but as liquidation damages, for each and every calendar day that the Work remains incomplete after the time stipulated. The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the extreme difficulty in fixing and ascertaining the actual damages the Owner would sustain in such an event, and said amount is agreed to be the amount of damages which the Owner would sustain.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1** employees on the Work and other persons who may be affected thereby;
- .2** the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3** other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel. Contractor shall give fourteen (14) day notice to Owner and Architect prior to use.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or

polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

§ 10.5 Affidavit for Asbestos Exclusion and Notification

Within thirty (30) days of "Notice to Proceed" the Contractor will submit a notarized affidavit that states, "The undersigned Contractor certifies that to the best of his knowledge, information and belief the Work covered by the Contract Documents for this project will be completed without the use of any asbestos, asbestos related materials, fibers or equipment, and that the Architect and Owner will be immediately notified if the Contractor, or any of his assigns or subcontractors, uncovers or has belief that asbestos products or materials are being used, installed or uncovered at the jobsite."

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract

Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for

damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.2.4 Just prior to termination of the one year warranty period, the Contractor shall accompany the Owner and Architect on a tour of the building and shall note any defects and shall start remedying these defects within ten days of the tour. For extended warranties or guarantees required by various sections, i.e. roofing, compressors, mechanical equipment, the Owner will notify the Contractor of deficiencies and Contractor shall start remedying these defects within (7) seven days of initial notification from Owner. Contractor shall prosecute the work without interruption until accepted by the Owner and the Architect even though such prosecution should extend beyond the limits of the warranty period.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the State of [REDACTED], with venue in the County of [REDACTED].

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

Payments and interest are due and payable pursuant to Texas Prompt Payment Act, Texas Government Code 2251.

§ 13.6 Equal Opportunity in Employment

§ 13.6.1 The Contractor and the Contractor's Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, age, disability, sex, or national origin. The Contractor agrees to post in conspicuous places, available to employees and applicants, notices setting forth the Contractor's nondiscrimination policies.

§ 13.6.2 The Contractor and the Contractor's Subcontractors shall, in all solicitations or advertisements for employees placed by them or on their behalf, state that all qualified applicants will receive consideration for employment without regard to race, religion, age, disability, sex, or national origin.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue

Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating 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.

§ 15.1.6.3 Claims for increase in the Contract Time shall set forth in detail circumstances that form the basis for the Claim, the date upon which each cause of delay began to affect the progress of the Work, the date upon which each cause of delay ceased to affect the progress of the Work and the number of days' increase in the Contract Time claimed as a consequence of each such cause of delay. The Contractor shall provide such supporting documentation as the Owner may require including, where appropriate, a revised construction schedule indicating all the activities

§ 15.1.6.4 The Contractor shall not be entitled to a separate increase in the Contract Time for each one of the number of causes of delay which may have concurrent or interrelated effects on the progress of the Work, or for concurrent delays due to the fault of the Contractor.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents. If, before expiration of 30 days from the date of execution of this Agreement, the Owner obtains by separate agreement and furnishes to the Contractor a similar mutual waiver of all claims from the Architect against the Contractor for consequential damages which the Architect may incur as a result of any act or omission of the Owner or Contractor, then the waiver of consequential damages by the Owner and Contractor contained in this Section 15.1.7 shall be applicable to claims by the Contractor against the Architect.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation with the parties mutually agreeing on a mediator. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 DELETED IN ITS ENTIRETY

§ 15.5 Immunities

§ 15.5.1 Contractor stipulates that Owner is a political subdivision of the State of Texas, and, as such, enjoys immunities from suit and liability provided by the Constitution and laws of the State of Texas. By entering into this Agreement, Owner does not waive any of its immunities from suit and/or liability, except as otherwise specifically provided herein and as specifically authorized by law.

§ 15.5.2 In any adjudication under this Agreement, reasonable and necessary attorney's fees may be awarded to the prevailing party.

SECTION 00 73 43 – WAGE RATE REQUIREMENTS

PART 1 - GENERAL

1.1 WAGE RATE ESTABLISHMENT

- A. Pursuant to Chapter 2258, Texas Government Code, all Contractors, and any subcontractor involved in the construction of a public Work Project shall pay not less than the prevailing rates as per diem wages in the locality at the time of construction to all laborers, workmen and mechanics employed by them in the execution of this contract.
- B. The contractor shall forfeit as a penalty to Owner, \$60.00 for each laborer, workman, or mechanic employed for each calendar day, or portion thereof, such laborer, workman, or mechanic is paid less than the said stipulated rates for any Work done under this contract by him, or by any subcontractor under him.
- C. Nothing herein contained, 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.
- D. Attention is called to the fact that there must be paid on this Project not less than the general prevailing rates which have been established by Owner and verified by the Contractor as indicated in the schedule at the end of this document.
- E. The General Prevailing Rate for overtime shall be 1-1/2 times the scheduled rate on an hourly basis.

1.2 POSTING WAGE RATES

- A. Minimum Wage Rates shall be posted on job Site in a conspicuous place open for inspection by all workmen.

1.3 EMPLOYEE CLAIMS

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

1.4 PAYMENT OF EMPLOYEES AND PAYROLL RECORDS

- A. Contractor and each subcontractor shall pay each of his employees engaged to perform Work under this Contract in full (less mandatory legal deductions) not less than once a week.
- B. Payment is to be in cash or check readily payable without discount. 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. Attach one copy of cash payment verification to payroll records.
- D. Contractor and each subcontractor engaged at the site of the Work shall prepare and maintain weekly payroll reports certified to be correct.
- E. Payroll records shall contain the name, social security number, classification, rate per hour, hours worked each day, including regular hours and overtime hours.

1.5 PAYROLL RECORDS

- A. Payroll records shall be made available upon request for inspection by the Architect or by a designated representative of Owner to ascertain compliance with the minimum wage scale provision of this Contract.

1.6 WAGE RATE SCHEDULE

- A. See attached General Decision TX 20240280 dated January 05, 2024, issued by the Federal Government and any revisions/updates issued for Crosby and Lubbock Counties.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

"General Decision Number: TX20240280 01/05/2024

Superseded General Decision Number: TX20230280

State: Texas

Construction Type: Building

Counties: Crosby and Lubbock Counties in Texas.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	<ul style="list-style-type: none"> . Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	<ul style="list-style-type: none"> . Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number 0 Publication Date 01/05/2024

BOIL0074-003 07/01/2023

	Rates	Fringes
BOILERMAKER.....	\$ 37.00	24.64

CARP0665-001 01/01/2022		

	Rates	Fringes
CARPENTER.....	\$ 24.98	7.83

ELEC0602-008 09/01/2022		
	Rates	Fringes
ELECTRICIAN.....	\$ 26.07	12.63

ENGI0178-005 06/01/2020		
	Rates	Fringes
POWER EQUIPMENT OPERATOR		
(1) Tower Crane.....	\$ 32.85	13.10
(2) Cranes with Pile Driving or Caisson Attachment and Hydraulic Crane 60 tons and above.....	\$ 28.75	10.60
(3) Hydraulic cranes 59 Tons and under.....	\$ 32.35	13.10

IRON0084-011 06/01/2023		
	Rates	Fringes
IRONWORKER, ORNAMENTAL.....	\$ 27.51	8.13

IRON0263-003 06/01/2023		
	Rates	Fringes
IRONWORKER, STRUCTURAL.....	\$ 27.89	7.93

PLUM0404-001 09/01/2022		
	Rates	Fringes
PLUMBER.....	\$ 28.64	10.65

SHEE0049-001 06/01/2022		
	Rates	Fringes
SHEET METAL WORKER (HVAC Duct Installation Only).....	\$ 26.72	12.13

SUTX2014-060 07/21/2014		
	Rates	Fringes
BRICKLAYER.....	\$ 20.04	0.00
CEMENT MASON/CONCRETE FINISHER...	\$ 19.60	0.00
INSULATOR - MECHANICAL (Duct, Pipe & Mechanical System Insulation).....	\$ 19.77	7.13
IRONWORKER, REINFORCING.....	\$ 12.27 **	0.00
LABORER: Common or General.....	\$ 12.35 **	0.00
LABORER: Mason Tender - Brick...	\$ 11.36 **	0.00
LABORER: Mason Tender - Cement/Concrete.....	\$ 10.58 **	0.00
LABORER: Pipelayer.....	\$ 12.49 **	2.13
LABORER: Roof Tearoff.....	\$ 11.28 **	0.00

OPERATOR:		
Backhoe/Excavator/Trackhoe.....	\$ 14.25 **	0.00
OPERATOR: Bobcat/Skid		
Steer/Skid Loader.....	\$ 13.93 **	0.00
OPERATOR: Bulldozer.....	\$ 18.29	1.31
OPERATOR: Drill.....	\$ 16.22 **	0.34
OPERATOR: Forklift.....	\$ 14.83 **	0.00
OPERATOR: Grader/Blade.....	\$ 13.37 **	0.00
OPERATOR: Loader.....	\$ 13.55 **	0.94
OPERATOR: Mechanic.....	\$ 17.52	3.33
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 16.03 **	0.00
OPERATOR: Roller.....	\$ 12.70 **	0.00
PAINTER (Brush, Roller, and Spray).....	\$ 14.27 **	0.00
ROOFER.....	\$ 13.75 **	0.00
SHEET METAL WORKER, Excludes HVAC Duct Installation.....	\$ 21.13	6.53
TILE FINISHER.....	\$ 11.22 **	0.00
TILE SETTER.....	\$ 14.00 **	2.01
TRUCK DRIVER: Dump Truck.....	\$ 12.39 **	1.18
TRUCK DRIVER: Flatbed Truck.....	\$ 19.65	8.57
TRUCK DRIVER: Semi-Trailer Truck.....	\$ 12.50 **	0.00
TRUCK DRIVER: Water Truck.....	\$ 12.00 **	4.11

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====
 ** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.20) or 13658 (\$12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons

resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union

average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====
END OF GENERAL DECISION"

SECTION 01 10 00 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Work covered by Contract Documents.
 - 2. Owner furnished products.
- B. Related Requirements:
 - 1. Other Division 01 Specification Sections apply to Work of this Section.
 - 2. Section 01 30 00 "Administrative Requirements" for Project information management.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. Identification: Town of Ransom Canyon Jones-Warner Park Improvements.
- B. Location: Ransom Canyon, Texas.
 - 1. Without force or effect, Work of Project Work of the Project consists on building a new adult softball fields, including but not limited to lighting, fencing, bleachers, concrete sidewalks. Take note to review the Plans carefully, and to attend the Non-Mandatory Pre-Proposal meeting prior to submitting a Proposal number. Questions, in writing, are always welcome prior to the deadline 3 days before the Proposal Opening. This allows time to issue an official response on or before 2 days before the Proposal Opening.

1.3 OWNER FURNISHED PRODUCTS

- A. Products furnished to site and paid for by Owner: As shown on Drawings.
- B. Owner's Responsibilities:
 - 1. Arrange for and deliver Owner reviewed Shop Drawings, product data, and samples, to Contractor.
 - 2. Arrange and pay for product delivery to site.
 - 3. On delivery, inspect products jointly with Contractor.
 - 4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
 - 5. Arrange for manufacturers' warranties, inspections, and service.
- C. Contractor's Responsibilities:
 - 1. Review Owner reviewed Shop Drawings, product data, and samples.
 - 2. Receive and unload products at site; inspect for completeness or damage, jointly with Owner.
 - 3. Handle, store, install, and finish products.
 - 4. Repair or replace items damaged after receipt.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 20 00 - PRICE AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 CONTINGENCY ALLOWANCE

- A. Include stipulated sum of \$25,000 for use upon Owner's instruction.
- B. Costs Included in Contingency Allowance: Contractor's costs for products, equipment, delivery, installation, labor, insurance, payroll, applicable taxes, and equipment rental; handling at site, including unloading, uncrating, and storage; protection of products from elements and from damage; finishing costs.
- C. Costs Not Included in Contingency Allowance, but included in Contract Sum/Price: Bonds, insurance, overhead, profit, and other expenses contemplated for stated allowance amounts.
- D. Funds will be drawn from Contingency Allowance only by Change Order.
- E. At closeout of Contract, funds remaining in Contingency Allowance will be credited to Owner by Change Order.

1.3 INSPECTION AND TESTING ALLOWANCES

- A. Costs Included in Allowances: Cost of engaging an inspection or testing firm, execution of inspection or tests, and reporting results.
- B. Costs Not Included in Allowance but Included in Contract Sum/Price:
 - 1. Incidental labor and facilities required to assist inspection or testing firm.
 - 2. Costs of testing laboratory services required by Contractor separate from Contract Document requirements.
 - 3. Costs of retesting upon failure of previous tests as determined by Architect.
- C. Payment Procedures:
 - 1. Submit inspection or testing firm's invoice with next application for payment.
 - 2. Pay invoice on approval by Architect.
- D. Inspection and Testing Allowances: Owner will pay for any testing through independent means.

- E. Funds will be drawn from Inspection and Testing Allowances only by Change Order.
- F. At closeout of Contract, funds remaining in Inspection and Testing Allowances will be credited to Owner by Change Order.

1.4 SCHEDULE OF VALUES

- A. Submit typed schedule on AIA Form G703 - Application and Certificate for Payment Continuation Sheet.
- B. Submit Schedule of Values in duplicate within 15 days after date established in Notice to Proceed or of Owner-Contractor Agreement, whichever is sooner.
- C. Format: Utilize Table of Contents of this Project Manual. Identify each line item with number and title of major Specification Section, separating labor and material for each line item. Identify site mobilization, general conditions, testing, bonds, and insurance as separate line items.
- D. Include in each line-item amount of Allowances specified in this Section. For unit price Allowances, identify quantities taken from Contract Documents multiplied by unit cost to achieve total for item.
- E. Include within each line item, a directly proportional amount of Contractor's overhead and profit.
- F. Revise schedule to list approved Change Orders, with each Application for Payment.

1.5 APPLICATIONS FOR PAYMENT

- A. Submit notarized application on AIA Form G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet.
- B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.
- C. Payment Period: As defined in Owner-Contractor agreement.
- D. A complete application for payment includes 1 copy of waiver of liens from each subcontractor, Construction progress schedule, and submittal schedule, all which are required to process the Application for Payment.

1.6 CHANGE PROCEDURES

- A. Architect will advise of minor changes in Work not involving an adjustment to Contract Sum/Price or Contract Time as authorized by Owner/Contractor Agreement by issuing Architect's Supplemental Instructions on Architect's Standard Supplemental Instruction form.
- B. Architect may issue a Construction Change Request which includes a detailed description of a proposed change with supplementary or revised Drawings and Specifications and a change in Contract Time for executing change. Contractor will prepare and submit an estimate within 7 days.
- C. Contractor may propose a change by submitting request for change to Architect. Include reason for change and effect on Contract Sum/Price, Contract Time, and subcontractors. Document requested substitutions in accordance with Section 01 60 00 "Product Requirements."
- D. Stipulated Sum/Price Change Order: Based on Proposal Request and Contractor's fixed price quotation or Contractor's request for a Change Order as approved by Architect.

- E. Unit Price Change Order: For pre-determined unit prices and quantities, Change Order will be executed on a fixed unit price basis. For unit costs or quantities of units of Work which are not pre-determined, execute Work under a Construction Change Directive. Changes in Contract Sum/Price or Contract Time will be computed as specified for Time and Material Change Order.
- F. Construction Change Directive: Architect may issue a directive, on AIA Form G713 Construction Change Directive signed by Owner, instructing Contractor to proceed with a change in Work, for subsequent inclusion in a Change Order. Document will describe changes in Work, and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute change.
- G. Time and Material Change Order:
 - 1. Submit itemized account and supporting data after completion of change, within time limits indicated in Conditions of the Contract.
 - 2. Architect will determine change allowable in Contract Sum/Price and Contract Time as provided in Contract Documents.
 - 3. Maintain detailed records of Work done on Time and Material basis.
 - 4. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in Work.
- H. Change Order Forms: AIA G701 Change Order.
- I. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in Conditions of the Contract.
- J. Change Order: Furnish an itemized breakdown, in form acceptable to Architect of costs and supporting information including but not limited to quantities and material prices. Tier subcontracted Work performed at labor rates, employer payments, and rental rates. Itemize breakdown detail shall be same for subcontractor Work. Provide complete supporting information for profit and overhead or markups used when requested. Consider the following items a part of overhead or Contractor's and subcontractor's mark-up and do not include as separate cost item: Labor for Superintendents, Assistant Superintendents, home office personnel, timekeepers, and maintenance mechanics at any level of contracting; individual pieces of equipment, hand tools or instruments having a new value of \$500 or less, whether or not consumed by use; on site and main offices; modification to record Contract Documents; nor guarantee period costs.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 30 00 - ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Project Information Management.
 - 2. Coordination.
 - 3. Submittal schedule.
 - 4. Preconstruction meeting.
 - 5. Request for information.
 - 6. Progress meetings.
 - 7. Preinstallation meetings.
- B. Related Requirements:
 - 1. Other Division 01 Specification Sections apply to Work of this Section.

1.2 PROJECT INFORMATION MANAGEMENT

- A. Project Website:
 - 1. Use Newforma Info Exchange; <https://projects.team-psc.com/UserWeb/Login> to send and receive Project information.
 - 2. Contact Project Coordinator, Iridian Carrasco, at icarrasco@parkhill.com to setup name and password information.
 - 3. If this Project is not listed when logged in, contact Project Coordinator, Iridian Carrasco to add this Project to your account.
- B. Project information includes, but is not limited to, the following:
 - 1. Product Submittals.
 - 2. Requests for Information (RFI).
 - 3. Applications for Payment.
 - 4. Schedules.
 - 5. Construction Change Requests (CCRs).
 - 6. Closeout Documents.
 - 7. Construction Document Files.

1.3 COORDINATION

- A. Coordinate scheduling, submittals, and Work to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items installed later.
- B. Verify that utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate Work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- C. Coordinate space requirements and installation of mechanical and electrical Work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize space efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- D. In finished building areas, except as otherwise indicated, conceal pipes, ducts, and wiring within construction. Coordinate locations of fixtures and outlets with finish elements, as applicable.

- E. Coordinate completion and clean-up of Work of separate Sections in preparation for Substantial Completion.
- F. After Owner occupancy of premises, coordinate access to site with Owner for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.4 SUBMITTAL SCHEDULE

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

1.5 PRECONSTRUCTION MEETING

- A. Architect will schedule a meeting after Notice to Proceed.
- B. Attendance Required:
 - 1. Owner.
 - 2. Architect.
 - 3. Contractor.
 - 4. Major subcontractors.
- C. Agenda:
 - 1. Submission of executed bonds and insurance certificates.
 - 2. Distribution of Contract Documents.
 - 3. Submission of list of subcontractors, list of products, Schedule of Values, submittal schedule, and progress schedule.
 - 4. Designation of personnel representing each party in Contract and Architect.
 - 5. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, Request for Information (RFI), and Contract closeout procedures.
 - 6. Review Notice to Proceed (NTP) and Substantial Completion Dates.
 - 7. Workers' Identification and Background Checks.
 - 8. Surface drainage requirements (SWPPP).

9. Scheduling:
 - a. Use of premises by Owner and Contractor.
 - b. Owner's requirements and occupancy.
 - c. Temporary utilities provided by Owner.
 - d. Survey and building layout.
 - e. Security and housekeeping procedures.
 - f. Construction progress meetings.
 - g. Procedures for testing.
 - h. Procedures for maintaining record documents.
 - i. Requirements for start-up of equipment.
 - j. Inspection and acceptance of equipment put into service during construction period.
10. Scheduling activities of Construction Material Testing (CMT) lab.
- D. Record minutes and distribute copies within 3 days after meeting to participants with 2 copies to Architect and those affected by decisions made.

1.6 REQUEST FOR INFORMATION

- A. RFI requests from subcontractors or material suppliers will not be considered.
- B. Information indicated on RFI shall be complete before submission. If Landscape Architect determines request can be answered with information provided, Landscape Architect will assign RFI tracking number. If Landscape Architect determines request is not an RFI, request will be returned to Contractor electronically and deleted from Landscape Architect's electronic tracking software without assigning an RFI tracking number. A transmittal document returning denied RFI request will be provided with a response indicating action to be taken by Contractor.
- C. RFIs may contain more than one item when items are related. Otherwise, only one item shall be addressed on each RFI request.
- D. Allow seven days for Landscape Architect's response to each RFI.
- E. Response to RFI will be issued to Contractor and Owner per Section 013300 "Submittal Procedures."
- F. Responses from Landscape Architect are not changes unless issued with a change per Section 012000 "Price and Payment Procedures."
- G. A sample RFI Form is attached at the end of this Section. Contractor will be provided a blank form for its use.
- H.

1.7 PROGRESS MEETINGS

- A. Schedule and administer monthly meetings throughout Work progress, at minimum.
- B. Landscape Architect will arrange meetings, prepare agenda with copies for participants, preside at meetings.
- C. Attendance Required:
 1. Owner.
 2. Job superintendent.
 3. Major subcontractors.
 4. Suppliers.
 5. As appropriate to agenda topics for each meeting.

- D. Agenda:
1. Review minutes of previous meetings.
 2. Review of Work progress.
 3. Field observations, problems, and decisions.
 4. Identify problems which impede planned progress.
 5. Review of submittals schedule and status of submittals.
 6. Review RFI log.
 7. Review of off-site fabrication and delivery schedules.
 8. Maintenance of progress schedule.
 9. Corrective measures to regain projected schedules.
 10. Planned progress during succeeding Work period.
 11. Coordination of projected progress.
 12. Maintenance of quality and Work standards.
 13. Effect of proposed changes on progress schedule and coordination.
 14. Other business relating to Work.
- E. Record minutes and distribute copies within 5 days to Architect, participants, and those affected by decisions made.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

**RFI
No.**

TO: Parkhill

FROM:

PROJECT NAME:

PARKHILL PROJECT NO.:

Issue Date:		*Requested Reply Date:	
--------------------	--	-------------------------------	--

*Items to be completed by Contractor before submittal to Parkhill for review. RFI form must be fully completed for Parkhill to respond.

***RFI DESCRIPTION:** (Fully describe the question or type of information requested. Provide photos and/or sketches as applicable to help with the description.)

***REFERENCES/ATTACHMENTS:** (List specific documents researched when seeking the information requested.)

Specifications	Drawings	Other

***CONTRACTOR'S PROPOSED SOLUTION:** (If RFI concerns a site or construction condition, the sender shall provide a recommended solution, including cost and/or schedule considerations before Parkhill can respond. The proposal solution shall consist of a revised text, sketches, drawings, etc. as applicable to a full and complete explanation.)

*Submitted by:

RESPONSE: (Provide answer to RFI, including cost and/or schedule considerations, revised text, sketches, drawings, etc. as applicable to fully explain response.)

Attachments:

Response by:

Copies: Owner Consultants

Note: This reply is not an authorization to proceed with work involving additional cost, time or both. If any reply requires a change to the Contract Documents, a Change Order, Construction Change Directive or a Minor Change in the work must be executed in accordance with the Contract Documents.

 **AIA[®] Document C106™ – 2022****Digital Data Licensing Agreement**

AGREEMENT made as of the day of in the year
(In words, indicate day, month, and year.)

BETWEEN the Party transmitting Digital Data ("Transmitting Party"):
(Name, address, and contact information, including electronic addresses)

and the Party receiving the Digital Data ("Receiving Party"):
(Name, address, and contact information, including electronic addresses)

for the following Project:
(Name and location or address of the Project)

for the following Digital Data ("Digital Data"):
(Identify below, in detail, the information created or stored in digital form that the Parties intend to be subject to this Agreement.)

[Revit Models (.rvt files)]
[AutoCAD (.dwg files)]
[Portable Document Format (.pdf)]

The Transmitting Party and Receiving Party agree as follows.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

TABLE OF ARTICLES

1	GENERAL PROVISIONS
2	TRANSMISSION OF DIGITAL DATA
3	LICENSE CONDITIONS
4	LICENSING FEE OR OTHER COMPENSATION

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 The purpose of this Agreement is to grant a license from the Transmitting Party to the Receiving Party for the Receiving Party's use of Digital Data and to set forth the license terms.

§ 1.2 This Agreement is the entire and integrated agreement between the Parties. Except as specifically set forth herein, this Agreement does not create any other contractual relationship between the Parties.

§ 1.3 Confidential Digital Data is Digital Data containing confidential or business proprietary information that the Transmitting Party designates as "confidential."

ARTICLE 2 TRANSMISSION OF DIGITAL DATA

§ 2.1 The Transmitting Party grants to the Receiving Party a nonexclusive limited license to use the Digital Data solely and exclusively for the uses, and in accordance with the terms, set forth in Article 3.

§ 2.2 Only the Receiving Party is permitted to access and use the Digital Data. Unlicensed and unauthorized access or use by third parties is strictly prohibited except as set forth in Section 2.4.1.

§ 2.3 The transmission of Digital Data constitutes a warranty by the Transmitting Party to the Receiving Party that the Transmitting Party is the copyright owner of the Digital Data or otherwise has permission to transmit the Digital Data to the Receiving Party for its use on the Project in accordance with the terms and conditions of this Agreement.

§ 2.4 Where the Transmitting Party has designated information furnished pursuant to this Agreement as "confidential," the Receiving Party shall keep the information confidential and shall not disclose it to any other person or entity except as set forth in Section 2.4.1.

§ 2.4.1 The Receiving Party may disclose Confidential Digital Data after seven (7) days' notice to the Transmitting Party where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Receiving Party may also disclose Confidential Digital Data to its employees, consultants, sureties, subcontractors and their employees, sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.5 By transmitting Digital Data, the Transmitting Party does not convey any ownership right in the Digital Data or in the software used to generate the Digital Data. Unless otherwise granted in a separate license, the Receiving Party's right to use, modify, or further transmit Digital Data is specifically limited to those uses, and in accordance with the terms, set forth in Article 3, and nothing contained in this Agreement conveys any other right to use the Digital Data.

§ 2.6 To the fullest extent permitted by law, the Receiving Party shall indemnify and defend the Transmitting Party from and against all claims arising from or related to the Receiving Party's modification to, or unlicensed use of, the Digital Data.

§ 2.7 Transmission of the Digital Data does not abridge or extinguish the Transmitting Party's rights, including, to the extent applicable, exclusive ownership interest, in such information under all applicable state, federal, and international laws including, without limitation, laws governing the protection of copyrights and intellectual property.

§ 2.8 The provisions of this Article 2 shall survive the termination of this Agreement.

ARTICLE 3 LICENSE CONDITIONS

§ 3.1 The Receiving Party may use and rely upon the Digital Data to the extent set forth in this Article 3.

(Paragraph deleted)

[X] § 3.1.1 The Digital Data is transmitted solely for the Receiving Party's information. Receiving Party acknowledges that any use of the Digital Data shall be at Receiving Party's sole risk. The Receiving Party accepts the Digital Data "as is" without any warranty or representations from the Transmitting Party as to whether the Digital Data is accurate, complete, or fit for use as intended by the Receiving Party. The Receiving Party is solely responsible for verifying whether the Digital Data is accurate, complete, or fit for the Receiving Party's intended use.

(Paragraphs deleted)

§ 3.1.1.1 This Digital Data is part of the Transmitting Party's Instruments of Service and shall not be used by Receiving Party or anyone else receiving this data through or from the Receiving Party for any purpose other than as a convenience in the preparation of bid submittals, shop drawings, coordination drawings, construction phase submittals, and field layout and staking required by the Owner for the exclusive use of the referenced Project. Any use or reuse by the Receiving Party or by others will be at the Receiving Party's sole risk and without liability or legal exposure to Transmitting Party. The Receiving Party agrees to make no claim and hereby waive, to the fullest extent permitted by law, any claim or cause of action of any nature against Transmitting Party, its officers, directors, employees, or subconsultants that may arise out of or in connection with Receiving Party's use of this Digital Data.

§ 3.1.1.2 No representation as to the compatibility of this Digital Data with Receiving Party's hardware or software is provided.

§ 3.1.1.3 This Digital Data is not a Construction Document. Differences may exist between this Digital Data and corresponding two-dimensional hard-copy Construction Document. The Transmitting Party makes no representation regarding the accuracy or completeness of the Digital Data the Receiving Party receives. In the event that a conflict arises between the signed/sealed two-dimensional hard-copy Construction Document prepared by Transmitting Party and the Digital Data, the signed/sealed two-dimensional hard-copy Construction Document shall govern. The Receiving Party is responsible for determining if any conflict exists. By the Receiving Party's use of this Digital Data, Receiving Party is not relieved of their duty to fully comply with the Contract Documents, including, and without limitation, the need to check, confirm and coordinate all dimensions and details, field measurements, verify field conditions and coordination of work with that of other contractors for the Project.

§ 3.1.1.4 Because information presented in the Digital Data can be modified, unintentionally or otherwise, the Transmitting Party reserves the right to remove all indicia of ownership and/or involvement from each Digital Data.

§ 3.1.1.5 Under no circumstances shall delivery of this Digital Data for use by the Receiving Party be deemed a sale of document ownership by Transmitting Party, and no warranties, either express or implied, of merchantability or fitness for any particular purpose is made. In no event shall the Transmitting Party be liable for any loss of profit or any consequential damages as a result of the Receiving Party's use or reuse of this Digital Data.

§ 3.1.1.6 The Digital Data file does not necessarily contain all the information that is required to produce finished Construction Documents. Because of this, there may be data within the Digital Data that is missing, incomplete or even contradictory to the information provided in the final two dimensional Construction Documents.

§ 3.1.1.7 Professional judgment will need to be used by the Receiving Party, along with reasonable expectations and interpretations in order to use the Digital Data for its intended purpose. Should the Transmitting Party provide revised and updated copies of the Digital Data to the Receiving Party throughout the Project, all terms and conditions of this agreement will be applicable and unchanged for all subsequent transmissions of the Digital Data

ARTICLE 4 LICENSING FEE OR OTHER COMPENSATION

The Receiving Party agrees to pay the Transmitting Party the following fee or other compensation for the Receiving Party's use of the Digital Data:

(State the fee, in dollars, or other method by which the Receiving Party will compensate the Transmitting Party for the Receiving Party's use of the Digital Data.)

This Agreement is entered into as of the day and year first written above and terminates one year from said date, except as set forth below.

(Indicate when this Agreement will terminate, if other than one year from the date it was entered into, and other conditions related to termination.)

N/A

PARKHILL

[RECEIVING PARTY]

TRANSMITTING PARTY *(Signature)*

RECEIVING PARTY *(Signature)*

(Printed name and title)

(Printed name and title)

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 QUALITY CONTROL AND CONTROL OF INSTALLATION

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

1.3 TOLERANCES

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

1.4 REFERENCES

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

1.5 TESTING AND INSPECTION SERVICES

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

1.6 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual Specification Sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe Site conditions, conditions of surfaces and installation, quality of workmanship, and startup of equipment, test, adjust, and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to Architect 30 days in advance of required observations. Observer subject to approval of Architect.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

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

END OF SECTION

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 TEMPORARY ELECTRICITY

- A. Provide separate metering and pay utility provider or reimburse Owner for cost of energy used.
- B. Provide power outlets for construction operations, with branch wiring and distribution boxes as required.
- C. Provide flexible power cords as required.
- D. Provide main temporary service disconnect and overcurrent protection at convenient location in conformance with National Electric Code.
- E. Permanent convenience receptacles may not be utilized during construction.

- F. Provide adequate distribution equipment, wiring, and outlets to provide single phase branch circuits for power and lighting.
 - 1. Provide 20 ampere duplex outlets, single phase circuits for power tools for every 2,000 sq. ft. of active Work area and at specific locations as required.
 - 2. Provide 20 ampere, single phase branch circuits for lighting.

1.3 EMPLOYEE RESIDENTIAL OCCUPANCY

- A. Not allowed on Owner's property.

1.4 VEHICULAR ACCESS

- A. Construct temporary all-weather access roads from public thoroughfares to serve construction area, of width and load bearing capacity to accommodate unimpeded traffic for construction purposes.
- B. Construct temporary bridges and culverts to span low areas and allow unimpeded drainage.
- C. Extend and relocate vehicular access as Work progress requires, provide detours as necessary for unimpeded traffic flow.
- D. Provide and maintain access to fire hydrants and control valves free of obstructions.

1.5 PARKING

- A. Arrange for temporary gravel or paved surface parking areas to accommodate construction personnel.
- B. Locate as approved by Owner.
- C. When site space is not adequate, provide additional off-site parking.
- D. Use of designated existing on-site streets and driveways for construction traffic is permitted.
- E. Use of designated areas of existing parking facilities by construction personnel is permitted. Coordinate with Owner.
- F. Do not allow heavy or tracked vehicles or construction equipment in parking areas.
- G. Do not allow vehicle parking on existing pavement.
- H. Permanent Pavements and Parking Facilities:
 - 1. Prior to Substantial Completion, bases for permanent roads and parking areas may be used for construction traffic.
 - 2. Avoid traffic loading beyond paving design capacity. Tracked vehicles not allowed.
 - 3. Use of permanent parking structures is permitted.
- I. Maintenance:
 - 1. Maintain traffic and parking areas in sound condition free of excavated material, construction equipment, products, mud, snow, and ice.
 - 2. Maintain existing and permanent paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original, or specified, condition.
- J. Removal, Repair:
 - 1. Remove temporary materials and construction when permanent paving is usable Substantial Completion.
 - 2. Remove underground work and compacted materials to depth of 2 feet; fill and grade site as specified.
 - 3. Repair existing facilities damaged by use, to original condition.
- K. Mud from Site Vehicles: Provide means of removing mud from vehicle wheels before entering streets.

1.6 PROGRESS CLEANING

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

1.7 BARRIERS

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

1.8 TEMPORARY FENCING

- A. Construction: Contractor's option.
- B. Provide 6-foot-high fence around temporary materials storage area; equip with vehicular and pedestrian gates with locks.

1.9 WATER CONTROL

- A. Grade site to drain.
- B. Maintain excavations free of water.
- C. Provide, operate, and maintain pumping equipment.
- D. Protect site from puddling and running water. Provide water barriers as required to protect Site from soil erosion.
- E. Provide water barriers as required to protect existing building from puddling, ponding or other water accumulation that may damage foundations or other sub-surface construction.

1.10 DUST CONTROL

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

1.11 EROSION AND SEDIMENT CONTROL

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

1.12 POLLUTION CONTROL

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

1.13 PROTECTION OF INSTALLED WORK

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

1.14 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary above grade utilities, equipment, facilities, and materials as soon as permanent facilities can be utilized.
- B. Remove risers for underground utilities to a minimum depth of 2 feet and cap. Remove buried equipment, facilities, and materials completely to a minimum depth of 2 feet and cap.
- C. Backfill excavations as specified in other sections and grade site as indicated.
- D. Clean and repair damage caused by installation or use of temporary Work.
- E. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.
- F. Remove the following at completion of Work:
 - 1. Office.
 - 2. Storage sheds.
 - 3. Enclosures.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Products.
 - 2. Product delivery, storage, and handling.
 - 3. Product options.
 - 4. Substitutions.
- B. Related Requirements:
 - 1. Document 00 21 16 "Instructions to Proposers" for product options and substitution procedures.
 - 2. Other Division 01 Specification Sections apply to Work of this Section.
 - 3. Section 01 30 00 "Administrative Requirements" for Project information management.
 - 4. Section 01 40 00 "Quality Requirements" for product quality monitoring. Testing Laboratory Services.

1.2 PRODUCTS

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

1.3 PRODUCT DELIVERY, STORAGE, AND HANDLING

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

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

1.4 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.
- B. Products Specified by Naming 1 or More Manufacturers: Products of manufacturers named and meeting Specifications, no options or substitutions allowed.
- C. Products Specified by Naming 1 or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named in accordance with this Section.

1.5 SUBSTITUTIONS

- A. Instructions to Proposers specify time restrictions for submitting requests for Substitutions during Proposal period to requirements specified in this Section.
- B. Substitutions (after Proposal period) may be considered when a product becomes unavailable through no fault of Contractor.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- D. A request constitutes a representation that Proposer:
 - 1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
 - 2. Will provide same warranty for Substitution as for specified product.
 - 3. Will coordinate installation and make changes to other Work which may be required for Work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension which may subsequently become apparent.
- E. Substitutions will not be considered when they are indicated or implied on Shop Drawing or product data submittals, without separate written request, or when acceptance will require revision to Contract Documents.

- F. Substitution Submittal Procedure:
1. Submit request for Substitution for consideration. Limit each request to 1 proposed substitution.
 2. Requests shall include name of material or equipment to be substituted and a description of proposed substitution including Drawings, performance and test data, and other information necessary for an evaluation.
 3. Submit item-by-item (line-by-line) comparison of each item listed in Specification compiled and submitted comparing specified material/product with proposed substitution and specifically noting all differences between the compared products and/or systems.
 4. Submit statement setting forth changes in other material, equipment or other portions of Work including changes in Work of other Contracts that incorporation of proposed substitution would require shall be included.
 5. Submit Shop Drawings, product data, and certified test results for proposed product equivalence.
 6. Architect will notify Contractor, in writing, of decision to accept or reject request.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 70 00 - EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Architect's review.
- B. Provide submittals to Architect required by authority having jurisdiction.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- D. Closeout documents will be submitted electronically in OCR (Optical Character Recognition)/PDF format.
- E. At Owner's request, Contractor shall provide a hard copy of Closeout Documents in 3-ring binders.
- F. Owner will occupy all of building as specified in Section 01 10 00 "Summary."

1.3 FINAL CLEANING

- A. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains, and foreign substances; polish transparent and glossy surfaces; and vacuum carpeted and soft surfaces.
- B. Clean equipment and fixtures to sanitary condition with cleaning materials appropriate to surface and material being cleaned.
- C. Replace filters of operating equipment.
- D. Clean debris from roofs, gutters, downspouts, and drainage systems.
- E. Clean site: sweep paved areas, rake clean landscaped surfaces.
- F. Remove waste and surplus materials, rubbish, and construction facilities from site.

1.4 STARTING OF SYSTEMS

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

1.5 DEMONSTRATION AND INSTRUCTIONS

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

1.6 PROTECTING INSTALLED CONSTRUCTION

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

1.7 HAZARDOUS MATERIALS AFFIDAVITS

- A. Provide notarized affidavits declaring that hazardous materials were not incorporated into or delivered to site.
- B. Hazardous materials include asbestos, lead polychlorinated biphenyl (PCB), prohibited termite eradication chemicals or any substance of any proportion determined or suspected by an agency of federal or state government to create a health hazard.
- C. Provide table of contents listing affidavits in alphabetical order.
- D. Prepare cover page with printed title "AFFIDAVITS OF NON-INCORPORATED HAZARDOUS MATERIALS," Title of Project, Project Address, Owner's Name, Address and Phone, and Date of Construction Completion.
- E. Provide one complete set of aforementioned information in OCR (Optical Character Recognition)/PDF format.
- F. Submit prior to Application for Final Payment.

1.8 PROJECT RECORD DOCUMENTS

- A. Maintain on Site one set of Record Documents; record actual revisions to Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to Contract.
 - 5. Reviewed Shop Drawings, product data, and samples.
 - 6. Complete set of MSDS sheets for materials.
 - 7. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress, not less than weekly.
- E. Specifications: Legibly mark and record at each product Section description of products installed, including following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda, Change Orders, RFI responses, and other modifications. For Addenda, Change Orders, and RFI responses, cut out and tape to pages in appropriate location, referencing source of change.

- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
1. Measured depths of foundations in relation to finish first floor datum.
 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of Work.
 4. Field changes of dimension and detail.
 5. Details not on original Contract Drawings.
 6. Changes made by Addenda, Change Order, RFI responses, and other modifications. For Addenda, Change Orders, and RFI responses, cut out and tape to pages in appropriate location, referencing source of change.
 7. Submit in OCR (Optical Character Recognition)/PDF format.
 8. Comply with most current requirements of Department of State Health Services, Texas Asbestos Health Protection Rules (TAHPR), Title 25., HEALTH SERVICES, Part I, Chapter 295-Occupational Health, §295.34-Asbestos Management in Facilities and Public Buildings, paragraph (i) as a minimum and as outlined below.
 9. Submit MSDS on products used in construction of Project.
 10. Submit MSDS electronically in 8-1/2- by 11-inch format text pages.
 11. Prepare cover page with printed title "MATERIAL SAFETY DATA SHEETS (MSDS)," Title of Project, Project Address, Owner's Name, Address and Phone, and Date of Construction Completion.
 12. Internally subdivide contents with page dividers, organized into CSI format shown in Project Manual.
 13. Prepare a table of contents, listing each of Division headings and listing each material/product under each heading by manufacturer and material/product name.
 14. Submit complete set of aforementioned information in OCR (Optical Character Recognition)/PDF format.
 15. Submit information with Application for Final Payment and include MSDS for materials/products delivered or installed in Project.
 16. Failure to submit updated electronic MSDS documents will cause Application for Final Payment to be held by Architect (not submitted to Owner for processing) until such time updated electronic MSDS documents are received and reviewed for compliance by Architect.
- G. Submit documents to Architect with claim for final Application for Payment.

1.9 OPERATION AND MAINTENANCE DATA

- A. Submit data electronically in 8-1/2- by 11-inch text pages, OCR (Optical Character Recognition)/PDF format.
- B. Prepare cover page with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS," title of Project.

- C. Internally subdivide contents with page dividers, logically organized as described below:
 - 1. Drawings: Provide in OCR (Optical Character Recognition)/PDF format.
 - 2. Contents: Prepare Table of Contents for each file (if multiple files), with each product or system description identified, in 3 parts as follows:
 - a. Part 1: Directory, listing names, addresses, and telephone numbers of Architect, Contractor, subcontractors, and major equipment suppliers.
 - b. Part 2: Operation and maintenance instructions, arranged by system and subdivided by Specification Section. For each category, identify names, addresses, and telephone numbers of subcontractors and suppliers. Identify:
 - 1) Significant design criteria.
 - 2) List of equipment.
 - 3) Parts list for each component.
 - 4) Operating instructions.
 - 5) Maintenance instructions for equipment and systems.
 - 6) Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
 - c. Part 3: Project documents and certificates, including:
 - 1) Shop Drawings and product data.
 - 2) Air and water balance reports.
 - 3) Certificates.
 - 4) Scanned copies of warranties and bonds in OCR (Optical Character Recognition)/PDF format.
- D. Submit 1 complete set of aforementioned information in OCR (Optical Character Recognition)/PDF format.
- E. Submit documents with Application for Final Payment.

1.10 MANUAL FOR MATERIALS AND FINISHES

- A. Submit in OCR (Optical Character Recognition)/PDF format of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return electronic file with comments.
- B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within 10 days after acceptance.
- C. Submit 1 electronic copy of completed volumes 15 days prior to final inspection. Draft copy to be reviewed and returned after final inspection, with Architect comments. Revise content of electronic document set as required prior to final submission.
- D. Submit electronic documents of revised final volumes in final form within 10 days after final inspection.
- E. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Include information for re-ordering custom manufactured products.
- F. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- G. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Include recommendations for inspections, maintenance, and repair.
- H. Additional Requirements: As specified in individual product Specification Sections.
- I. Include listing in Table of Contents for design data, with fly sheet.

1.11 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Submit in OCR (Optical Character Recognition)/PDF format of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return with comments.
- B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit electronic documents within 10 days after acceptance.
- C. Submit electronic copy of completed volume(s) 15 days prior to final inspection. Draft copy to be reviewed and returned after final inspection, with Architect comments. Revise content of electronic document set as required prior to final submission.
- D. Submit electronic documents in OCR (Optical Character Recognition)/ PDF format of revised final volumes in final form within 10 days after final inspection.
- E. Each Item of Equipment and Each System: Include description of unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and model number of replaceable parts.
- F. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; by label machine.
- G. Include color coded wiring diagrams as installed.
- H. Operating Procedures: Include startup, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shutdown, and emergency instructions. Include summer, winter, and special operating instructions.
- I. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- J. Include servicing and lubrication schedule, and list of lubricants required.
- K. Include manufacturer's printed operation and maintenance instructions.
- L. Include sequence of operation by controls manufacturer.
- M. Include original manufacturer's parts list, illustrations, assembly Drawings, and diagrams required for maintenance.
- N. Include control diagrams by controls manufacturer as installed.
- O. Include Contractor's coordination Drawings, with color coded piping diagrams as installed.
- P. Include charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- Q. Include list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- R. Include test and balancing reports as specified in Section 01 40 00 "Quality Requirements."
- S. Additional Requirements: As specified in individual product Specification Sections.
- T. Include listing in Table of Contents for design data, with dividers.

1.12 SPARE PARTS AND MAINTENANCE PRODUCTS

- A. Furnish spare parts, maintenance, and extra products in quantities specified in individual Specification Sections.
- B. Deliver to and place in location as directed by Owner; obtain receipt prior to final payment.
- C. Submit receipts signed by Owner or letter stating Contractor has delivered extra products to Owner.

1.13 PRODUCT WARRANTIES AND PRODUCT BONDS

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

1.14 MAINTENANCE SERVICE

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 02 41 13 - SELECTIVE SITE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes preparing Project area for construction operations by demolition, removal, and salvage or disposal of all obstructions within limits of Project construction area. Such obstructions are expected to include but not necessarily limited to foundations, asphalt paving, concrete slabs, concrete curb and gutter, existing light poles with concrete footings and associated electrical conduit and wiring, existing water meter boxes, vaults and valve boxes with associated conduit and appurtenances, existing fence with concrete footings, and all rubbish and debris, whether above or below ground, except live utility facilities.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.

1.2 ITEMS TO REMAIN IN PLACE

- A. Take necessary precautions to avoid damage to existing items to remain in place, to be reused, or to remain the property of the Owner. Repair or replace damaged items as approved by the Architect. Coordinate the Work of this Section with all other Work indicated. Construct and maintain shoring, bracing, and supports as required. Ensure that structural elements are not overloaded. Increase structural supports or add new supports as may be required as a result of any cutting, removal, deconstruction, or demolition of Work. Provide new supports and reinforcement for existing construction weakened by demolition, deconstruction, or removal Work. Repairs, reinforcement, or structural replacement require approval by Architect prior to performing such Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 GENERAL

- A. Where applicable, all lines separating pavement to remove from that to remain in place, shall be cut neatly, in a straight line, or separated at an existing expansion or construction joint. Make cuts by sawing or other methods approved by Owner's Representative which will produce a satisfactory edge. In no case shall line be cut with a motor grader blade.
- B. Remove all existing materials to remove and dispose under this item and dispose in appropriate disposal areas off Owner property. Accomplish removal operations to minimize disturbance of existing underlying courses and adjacent pavement structures or improvements to remain in place. Rework, recompact, and regrade any underlying courses disturbed during removal operations to Architect satisfaction. Repair any damage to adjacent pavement structures or improvements to remain in place to Architect satisfaction.
- C. Unless otherwise indicated on Plans, remove all obstructions to 2 feet below lower elevations of excavation or to bottom of structure, whichever is lower.

- D. Backfill any voids created from removing obstructions within construction area with acceptable material. Compact per requirements of subgrade preparation of Contract Documents.
- E. Complete Work specified herein so prepared construction area is free of holes, ditches, and other abrupt changes in elevations and irregularities to contour.
- F. Protect personnel from possible airborne contaminants, including but not limited to, asbestos fibers, dried fecal matter, and metal dust.
- G. If material containing asbestos is encountered, an Asbestos Hazard Abatement Plan must be prepared.

END OF SECTION

SECTION 11 66 00 - ATHLETIC EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Pickleball court posts, nets, and accessories.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.
 - 2. Section 32 13 65 "Surfacing for Concrete Tennis and Pickleball Courts."

1.2 SUBMITTALS

- A. Product Data: Manufacturer's technical data and installation instructions.
- B. Shop Drawings: Show layout, dimensions, details, anchorages to structure, finishes, and components of system.

PART 2 - PRODUCTS

2.1 EQUIPMENT

- A. General: Equipment listed is available from Douglas Sports, <http://www.douglas-sports.com/>, Phone 800.553.8907. Equivalent equipment from other manufacturers will be considered.
- B. Pickleball Posts: Pickleball posts shall be Douglas Premier SQ Surface Mount Posts, Model 63080, as supplied by Douglas Industries, Inc., 800.553.8907, or approved equal. Color shall be black.
- C. Pickleball Net with Center Strap: Pickleball net shall be Douglas JTN-30, Model #20105, with Deluxe Adjustable Center Strap, Model #20600, and Center Pipe Anchor, Model #63428, as supplied by Douglas Industries, Inc., 800.553.8907, or approved equal.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install equipment in accord with manufacturer's instructions.
- B. Coordinate location with court layout plans.

END OF SECTION

SECTION 26 05 00 - BASIC ELECTRICAL METHODS

PART 1 - GENERAL

1.1 SUMMARY

- A. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.

1.2 REQUIREMENTS OF REGULATORY AGENCIES AND STANDARDS

- A. Regulatory Agencies: Installation, materials, equipment, and workmanship shall conform to the applicable provisions of the following:
 - 1. National Electrical Code (NEC).
 - 2. National Electrical Safety Code (NESC).
- B. Terms and conditions of the electrical utility and other authorities having lawful jurisdiction pertaining to the Work required.
- C. All temperature control wiring and associated conduit and boxes shall be provided under other Sections of the Specifications. All power and control wiring shall be provided under Division 26.
- D. The Work covered by Division 26 of the Specifications includes the furnishing of all materials, labor, transportation, tools, permits, and fees for the complete installation of all electrical Work required in the Contract Drawings.
- E. In the event that additional or special construction is required, Contractor is responsible for providing all material and equipment which are usually furnished with such construction in order to complete the installation whether indicated or not.
- F. Contractor shall familiarize himself with the existing conditions of the site and advise Architect of any discrepancy or conflict prior to Bidding.
- G. Contractor shall be responsible for all permits, fees, and licenses required for the Project. All cost of such permits or fees shall be included in the Bid.
- H. All equipment and material shall be installed in accordance with applicable manufacturer's recommendations and standards.
- I. Install sleeves, sealant pans, and roof penetrations as required for the installation of the electrical Work. All such Work is subject to the approval of Architect.
- J. Contractor shall be responsible for coordinating with the utility service provider to verify all locations, routing, equipment, and labor that will be furnished as a part of this Contract.
- K. Any fees or charges associated with delivering permanent power for the Project shall be included in Contractor's Bid.

1.3 SUBMITTALS

- A. The intent of this Section is to give general submittal information; refer to specific submittal information in the subsequent Mechanical Sections.
- B. Within 10 days after award of the Contract, and before orders are placed, Contractor shall submit specific information on list of equipment and principal materials specified. Contractor shall indicate and/or provide names of manufacturers, catalog and model numbers, cut sheets, and such other supplementary information as necessary for evaluation. Minimum of 6 copies, or as directed by Architect, of each shall be submitted and shall include all items mentioned by model number and/or manufacturer's name in the Specifications or in schedules on the Drawings.

- C. Requirements for Each Submittal:
 - 1. Bear a dated stamp or specific written indication that Contractor has reviewed and approved all submittal prior to submission to Architect.
 - 2. Have all information deleted by Contractor that pertains to the means and methods of construction or to fabrication, assembly, installation, or erection (approval by Architect shall not extend to these areas unless specifically noted by Architect).
 - 3. Be clearly and SPECIFICALLY marked as to which specific piece of equipment is being submitted, by use of a permanent marker, stamp, etc., so as to distinguish it from other pieces of equipment that may occur on the same page.
 - 4. Be clearly marked as to which available options are being submitted that are associated with a piece of equipment.
 - 5. Be complete with respect to quantities, dimensions, specific performance, materials, and similar data to enable Architect to review the proposed equipment.
- D. Omission by Contractor of any of the above requirements or submittals will subject submittal to automatic rejection without review.
- E. Any submittals received by Architect that were not requested shall be returned without review of any kind.

PART 2 - PRODUCTS

2.1 EQUIPMENT REQUIREMENTS

- A. The electrical requirements for equipment specified or indicated on the Drawings are based on information available at the time of design. If equipment furnished for installation has electrical requirements other than indicated on the Electrical Drawings, Contractor shall make any required changes to wire and conduit size, controls, overcurrent protection, and installation as required to accommodate the equipment supplied, without additional charge to Owner. The complete responsibility and costs for such adjustments shall be assigned to the respective Section of this Specification under which the equipment is furnished.

2.2 MATERIALS

- A. All similar materials and equipment shall be the product of the same manufacturer unless specified otherwise.
- B. Materials and equipment shall be the standard products of manufacturers regularly engaged in the production of such material and shall be the manufacturer's current and standard design.
- C. Altitude: Equipment affected by altitude shall perform satisfactorily for the function intended at the altitude of the Project site.
- D. Detectable Warning Tape: Acid and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, minimum 6 inches wide and 4 mils thick, continuously inscribed with a description of utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:
 - 1. Red: Electric.
 - 2. Yellow: Gas, oil, steam, and dangerous materials.
 - 3. Orange: Telephone and other communications.
 - 4. Blue: Water systems.
 - 5. Green: Sewer systems.

- E. Backfill Material:
 - 1. Material 4 inches below and 12 inches above pipes and conduit shall be natural or manufactured sand complying to ASTM C33.
 - 2. Material more than 12 inches above pipes and conduits shall be sand indicated above or native fill free of rock or gravel larger than 3/8-inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

PART 3 - EXECUTION

3.1 GENERAL

- A. Fabrication, erection, and installation of the complete electrical system shall be done in accordance with accepted good practice by qualified personnel experienced in such Work and shall proceed in an orderly manner so as not to impede the progress of the Project. Electrical Contractor shall check all areas and surfaces where electrical equipment material is to be installed, removed, or relocated and report any unsatisfactory conditions before starting Work. Commencement of Work signifies this Contractor's acceptance of existing conditions. In the acceptance or rejection of the finished installation, no allowance will be made for lack of skill on the part of workers. Surfaces requiring coatings will be completed prior to installation of any electrical Work on these surfaces.
- B. The Electrical Drawings are diagrammatic. The installation requirements shall be carefully coordinated with structural, architectural, and mechanical conditions and shall be adjusted to avoid conflict.
- C. All Work shall be concealed in walls, ceilings, and chases unless specifically noted to be exposed or otherwise approved.
- D. The locations of electrical equipment are approximate and are not intended to convey the exact details and mounting of location of outlets, equipment, and other items. Exact locations are to be field determined by actual measurements.
- E. The location height and projection of fixtures illuminating signs or special features shall be approved by Architect prior to installation.
- F. Contractor shall coordinate the location of all exterior fixtures with architectural Drawings and Specifications.
- G. Consult architectural Drawings to determine wall finishes and locations of wall-mounted equipment, countertop splashes, and similar items to avoid conflict with electrical equipment. At locations where surface or pendant mounted light fixtures are noted, provide for all necessary framing channels, pendants, chains, canopies, and other hardware as required for a complete and operable system.
- H. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.
- I. Excavation for Pipe and Conduit:
 - 1. Excavate trenches to indicated gradients, lines, depths, and elevations.
 - 2. Excavate trenches to uniform widths to provide a working clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit, unless otherwise indicated.

3. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.
 - a. For pipes and conduit less than 6 inches in nominal diameter and flat-bottomed, multiple-duct conduit units, hand excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
 - b. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe circumference. Fill depressions with tamped sand backfill.
 - c. Excavate trenches 4 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.
4. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
5. Compact soil to not less than the following percentages of maximum dry unit weight according to ASTM D698:
 - a. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill material at 95 percent.
 - b. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill material at 92 percent.
 - c. Under lawn or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill material at 85 percent.
6. Install detectable warning tape above conduits and pipe, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.
7. Protection:
 - a. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
 - b. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
 - 1) Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.
 - c. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 - 1) Restore appearance, quality, and condition of finished surfacing to match adjacent Work, and eliminate evidence of restoration to the greatest extent possible.
8. Disposal of Surplus and Waste Materials:
 - a. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property unless otherwise directed by Owner.
 - b. Repair: Any damage to shrubs, grass or structures shall be repaired to previous condition by Contractor at no additional expense to Owner.

- J. It shall be the responsibility of Division 26 Contractor to provide for all disconnecting and motor control devices for all equipment. Contractor shall coordinate to determine voltage, phase, and configurations.
- K. Division 26 Contractor shall be responsible for providing for all power requirements associated with the mechanical systems including power, control devices, smoke dampers, etc. Refer to Drawings for locations and requirements. Connect all smoke dampers to the fire alarm control panel.

3.2 PERFORMANCE TESTS

- A. Thoroughly test all control circuits, fixtures, services, and all circuits for proper operating condition and freedom from grounds and short circuits before acceptance is requested. All equipment, appliances, and devices shall be operated under load conditions.
- B. After the interior wiring system installation is complete conduct operating tests for approval. When requested, test all the wire, cable, devices, and equipment after installation, to assure that all material continues to possess all the original characteristics as required by governing codes and standards listed in these Specifications.
- C. After motor operation has been verified make voltage readings at all panelboards and starters. Based on these readings, make final adjustments of primary taps on all transformers in the building as directed, or coordinate with the utility proper building voltage.
- D. Perform such other tests as required by other Sections of these Specifications or as requested to prove acceptability.
- E. Furnish all instruments and labor for testing.
- F. All material installed shall be listed, inspected, and approved by a nationally accepted testing laboratory such as UL and/or ETL. All material shall bear the UL or ETL label where available.

3.3 SUBMITTAL AND APPROVAL OF MATERIALS

- A. All requirements for submittals shall comply with the applicable provisions included in the individual Specification Sections.
- B. Unless identified as a sole source item, the listing of product manufacturers, catalog numbers, etc., on Drawings is intended to establish a standard of quality of the product. It is the responsibility of Contractor to review all items he intends to submit. If equipment other than that indicated on Drawings is proposed by Contractor, the information will be reviewed at the time of the submission of the submittal.

END OF SECTION

SECTION 26 05 13 - BUILDING WIRE AND CABLE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Building wire and cable.
 - 2. Wiring connectors and connections.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.
 - 2. Section 01 40 00 "Quality Requirements" for requirements for references and standards.
 - 3. Section 26 05 53 "Electrical Identification."

1.2 REFERENCES

- A. NECA Standard of Installation (National Electrical Contractors Association).
- B. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems (International Electrical Testing Association).
- C. NFPA 70 - National Electrical Code.

1.3 SUBMITTALS FOR REVIEW

- A. Refer to Section 01 33 00 "submittal Procedures" for procedures for submittals.
- B. Product Data: Provide for each cable assembly type.

1.4 SUBMITTALS FOR INFORMATION

- A. Refer to Section 01 33 00 "Submittal Procedures" for procedures for submittals.
- B. Test Reports: Indicate procedures and values obtained.
- C. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency specified under Regulatory Requirements.

1.5 SUBMITTALS AT PROJECT CLOSEOUT

- A. Refer to Section 01 70 00 "Execution and Closeout Requirements" for procedures for submittals.
- B. Project Record Documents: Record actual locations of components and circuits.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum 3 years' documented experience.

1.7 REGULATORY REQUIREMENTS

- A. Conform to NFPA 70.
- B. Furnish products listed and classified by UL as suitable for the purpose specified and indicated.

1.8 FIELD SAMPLES

- A. Provide under provisions of Section 01 40 00 "Quality Requirements."

1.9 PROJECT CONDITIONS

- A. Refer to Section 01 30 00 "Administrative Requirements."
- B. Verify that field measurements are as indicated.
- C. Conductor sizes are based on copper.
- D. Wire and cable routing indicated is approximate unless dimensioned.

1.10 COORDINATION

- A. Coordinate Work under provisions of Section 01 30 00 "Administrative Requirements."
- B. Where wire and cable destination is indicated and routing is not shown, determine exact routing and lengths required.

PART 2 - PRODUCTS

2.1 BUILDING WIRE

- A. Manufacturers:
 - 1. American Cable.
 - 2. Houston Wire and Cable.
 - 3. Southwire.
 - 4. Substitutions: Refer to Section 01 60 00 "Product Requirements."
- B. Description: Single conductor insulated wire.
- C. Insulation Voltage Rating: 600 volts.
- D. Insulation: NFPA 70, Type indicated herein.
- E. MC Cable: Shall not be utilized on this Project.

2.2 WIRING CONNECTORS

- A. Split Bolt Connectors:
 - 1. Buchanan.
 - 2. Burndy.
 - 3. IlSCO.
 - 4. Substitutions: Refer to Section 01 60 00 "Product Requirements."
- B. Solderless Pressure Connectors:
 - 1. Buchanan.
 - 2. Burndy.
 - 3. IlSCO.
 - 4. Substitutions: Refer to Section 01 60 00 "Product Requirements."
- C. Spring Wire Connectors:
 - 1. Ideal.
 - 2. Substitutions: Refer to Section 01 60 00 "Product Requirements."
- D. Compression Connectors:
 - 1. Burndy.
 - 2. IlSCO.
 - 3. Substitutions: Refer to Section 01 60 00 "Product Requirements."

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Refer to Section 01 30 00 "Administrative Requirements" for verification of existing conditions before starting Work.
- B. Verify that interior of building has been protected from weather.
- C. Verify that mechanical work likely to damage wire and cable has been completed.
- D. Verify that raceway installation is complete and supported.

3.2 PREPARATION

- A. Completely and thoroughly swab raceway before installing wire.

3.3 WIRING METHODS

- A. Concealed Dry Interior Locations: Use only building wire, Type THHN/THWN insulation, in raceway.
- B. Exposed Dry Interior Locations: Use only building wire, Type THHN/THWN insulation, in raceway.
- C. Above Accessible Ceilings: Use only building wire, Type THHN/THWN insulation, in raceway.
- D. Wet or Damp Interior Locations: Use only building wire, Type THHN/THWN insulation, in raceway.
- E. Exterior Locations: Use only building wire, Type THHN/THWN insulation, in raceway.
- F. Use wiring methods indicated.

3.4 INSTALLATION

- A. Refer to Section 01 40 00 "Quality Requirements" for manufacturer's instructions.
- B. Route wire and cable as required to meet Project conditions.
- C. Install cable in accordance with the NECA "Standard of Installation."
- D. Use solid conductor for feeders and branch circuits 10 AWG and smaller.
- E. Use stranded conductors for control circuits.
- F. Use conductor not smaller than 12 AWG for power and lighting circuits with the exception of pre-manufactured fixture whips, listed for such use and not exceeding 6 feet in length.
- G. Use conductor not smaller than 14 AWG for control circuits.
- H. Use 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 100 feet and as indicated on the Drawings.
- I. Install all conductors in conduit.
- J. Pull all conductors into raceway at same time.
- K. Use suitable wire pulling lubricant for building wire 4 AWG and larger.
- L. Protect exposed cable from damage.
- M. All cables shall be neatly supported.
- N. Use suitable cable fittings and connectors.
- O. Neatly train and lace wiring inside boxes, equipment, and panelboards.
- P. Clean conductor surfaces before installing lugs and connectors.
- Q. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.

- R. Use split bolt connectors for copper conductor splices and taps, 6 AWG and larger. Tape uninsulated conductors and connector with electrical tape to 150 percent of insulation rating of conductor.
- S. Use solderless pressure connectors with insulating covers for copper conductor splices and taps, 8 AWG and smaller.
- T. Use insulated spring wire connectors with plastic caps for copper conductor splices and taps, 10 AWG and smaller.
- U. Identify and color code wire and cable under provisions of Section 26 05 53 "Electrical Identification." Identify each conductor with its circuit number or other designation indicated.
- V. The number of conductors in each conduit run shall be limited to the requirements as indicated on the Drawings and indicated in Article 310 of the National Electrical Code.

3.5 FIELD QUALITY CONTROL

- A. Refer to Section 01 40 00 "Quality Requirements" for field inspection, testing, and adjusting.
- B. Inspect and test in accordance with NETA ATS, except Section 4.
- C. Perform inspections and tests listed in NETA ATS, Section 7.3.1.

END OF SECTION

SECTION 26 05 19 - EQUIPMENT WIRING SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes basic electrical connections to equipment specified under other Sections.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.

1.2 REFERENCES

- A. NEMA WD 1 - General Purpose Wiring Devices.
- B. NEMA WD 6 - Wiring Device Configurations.
- C. ANSI/NFPA 70 - National Electrical Code.

1.3 SUBMITTALS

- A. Submit under provisions of Section 01 33 00 "Submittal Procedures."
- B. Product Data: Provide wiring device manufacturer's catalog information showing dimensions, configurations, and construction.
- C. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency specified under Regulatory Requirements. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of product.

1.4 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by UL as suitable for purpose specified and shown.

1.5 COORDINATION

- A. Coordinate work under provisions of Section 01 30 00 "Submittal Procedures."
- B. Obtain and review Shop Drawings, product data, and manufacturer's instructions for equipment furnished under other Sections.
- C. Determine connection locations and requirements.
- D. Sequence rough-in of electrical connections to coordinate with installation schedule for equipment.
- E. Sequence electrical connections to coordinate with startup schedule for equipment.

PART 2 - PRODUCTS

2.1 CORDS AND CAPS

- A. Attachment Plug Construction: Conform to NEMA WD 1.
- B. Configuration: NEMA WD 6; match receptacle configuration at outlet provided for equipment.

- C. Cord Construction: ANSI/NFPA 70, multiconductor flexible cord with identified equipment grounding conductor, suitable for use in damp locations.
- D. Size: Suitable for connected load of equipment, length of cord, and rating of branch circuit overcurrent protection.
- E. Division 26 Contractor shall be responsible for providing matching cord/receptacle for all equipment not furnished with such equipment.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify conditions under provisions of Section 01 30 00 "Submittal Procedures."
- B. Verify that equipment is ready for electrical connection, wiring, and energization.

3.2 ELECTRICAL CONNECTIONS

- A. Make electrical connections in accordance with equipment manufacturer's instructions.
- B. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations.
- C. Make wiring connections using wire and cable with insulation suitable for temperatures encountered in heat producing equipment.
- D. Provide receptacle outlet where connection with attachment plug is indicated. Provide cord and cap where field-supplied attachment plug is indicated.
- E. Provide suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.
- F. Install disconnect switches, controllers, control stations, and control devices as indicated.
- G. Modify equipment control wiring with terminal block jumpers as indicated.
- H. Provide interconnecting conduit and wiring between devices and equipment where indicated.
- I. Check and modify phase connections as required for proper motor rotation.
- J. Provide power to equipment only after equipment supplier verifies acceptance to receive and approves.
- K. Contractor shall coordinate with all equipment to verify exact power and control wiring as required to properly serve equipment.

END OF SECTION

SECTION 26 05 26 - GROUNDING AND BONDING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Rod electrodes.
 - 2. Mechanical connectors.
 - 3. Exothermic connections.
 - 4. Wire.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.
 - 2. Section 01 40 00 "Quality Requirements" for requirements for references and standards.

1.2 REFERENCES

- A. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems (International Electrical Testing Association).
- B. NFPA 70 - National Electrical Code.

1.3 GROUNDING SYSTEM DESCRIPTION

- A. Metal underground water pipe.
- B. Metal frame of the building.
- C. Rod electrodes.

1.4 PERFORMANCE REQUIREMENTS

- A. Grounding System Maximum Resistance: 10 ohms.

1.5 SUBMITTALS FOR REVIEW

- A. Refer to Section 01 33 00 "Submittal Procedures."
- B. Product Data: Provide for grounding electrodes and connections.

1.6 SUBMITTALS FOR CLOSEOUT

- A. Refer to Section 01 70 00 "Execution and Closeout Requirements" for procedures for submittals.
- B. Project Record Documents: Record actual locations of components and grounding electrodes.
- C. Certificate of Compliance: Indicate approval of installation by authority having jurisdiction.

1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum 3 years' documented experience, and with service facilities within 100 miles of Project.

1.8 REGULATORY REQUIREMENTS

- A. Conform to requirements of NFPA 70.
- B. Products: Listed and classified by UL as suitable for the purpose specified and indicated.

PART 2 - PRODUCTS

2.1 ROD ELECTRODES

- A. Material: Copper.
- B. Diameter: 3/4-inch.
- C. Length: 10 feet.

2.2 MECHANICAL CONNECTORS

- A. Description: In lieu of exothermic connections, high compression type as manufactured by Burndy using the 12 ton Hy-Ground series.

2.3 EXOTHERMIC CONNECTIONS

- A. Manufacturers: Cadweld.

2.4 WIRE

- A. Material: Stranded copper.
- B. Grounding Electrode Conductor: Minimum size to meet NFPA 70 requirements or as indicated on the Drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Refer to Section 01 30 00 "Administrative Requirements" for verification of existing conditions prior to beginning Work.
- B. Verify that final backfill and compaction has been completed before driving rod electrodes.

3.2 INSTALLATION

- A. Refer to Section 01 40 00 "Quality Requirements" for manufacturer's instructions.
- B. Install rod electrodes. Install additional rod electrodes as required to achieve a resistance to ground of 10 ohms or less. Rods shall be installed with a minimum separation of 6 feet.
- C. Provide bonding to meet Regulatory Requirements.
- D. Bond together metal siding not attached to grounded structure; bond to ground.

- E. Equipment Grounding Conductor: Provide separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing.
- F. Grounding Electrode System: The new grounding electrode system shall consist of the common bonding of building steel, underground steel water piping and supplemental ground rods, and concrete re-enforcing bar, as detailed on the Drawings.
- G. Provide proper bonding of the electrical system's grounded conductor (neutral) and the grounding electrode system sized in accordance with NEC Article 250. This bonding shall occur at all locations where there are separately derived systems.

3.3 FIELD QUALITY CONTROL

- A. Refer to Section 01 40 00 "Quality Requirements" for field inspection, testing, and adjusting.
- B. Inspect and test in accordance with NETA ATS, except Section 4.
- C. Perform inspections and tests listed in NETA ATS, Section 7.13.

END OF SECTION

SECTION 26 05 29 - SUPPORTING DEVICES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Supports for conduit and equipment.
 - 2. Anchors and fasteners.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.

1.2 REFERENCES

- A. NECA - National Electrical Contractors Association.
- B. NFPA 70 - National Electrical Code.

1.3 REGULATORY REQUIREMENTS

- A. Conform to requirements of NFPA 70.
- B. Furnish products listed and classified by UL as suitable for purpose specified and shown.

PART 2 - PRODUCTS

2.1 SUPPORTS

- A. Provide materials, sizes, and types of anchors, fasteners and supports to carry the loads of equipment and conduit. Consider weight of wire in conduit when selecting products.

2.2 ANCHORS AND FASTENERS

- A. Concrete Structural Elements: Use expansion anchors, powder actuated anchors, and preset inserts.
- B. Steel Structural Elements: Use beam clamps, spring steel clips, and steel ramset fasteners.
- C. Concrete Surfaces: Use self-drilling anchors and expansion anchors.
- D. Sheet Metal: Use sheet metal screws.
- E. Wood Elements: Use wood screws.
- F. Roof Support/Jacks: Advanced supports products # SS1000A or approved equal.

2.3 MATERIALS AND FINISHES

- A. Provide adequate corrosion resistance.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Provide anchors, fasteners, and supports in accordance with NECA "Standard of Installation."
- C. Do not fasten supports to pipes, ducts, mechanical equipment, and conduit.
- D. Obtain permission from Architect before drilling or cutting structural members.
- E. Fabricate supports from structural steel as indicated on Drawings. Rigidly weld members or use hexagon head bolts to present neat appearance with adequate strength and rigidity. Use lock washers under all nuts.
- F. Install surface-mounted cabinets and panelboards with minimum of 4 anchors.
- G. In wet and damp locations, use steel channel supports to stand cabinets and panelboards 1-inch off wall.
- H. Install conduit supports a maximum spacing specified in the NEC.

END OF SECTION

SECTION 26 05 33 - CONDUIT

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Metal conduit.
 - 2. Flexible metal conduit.
 - 3. Liquidtight flexible metal conduit.
 - 4. Electrical metallic tubing.
 - 5. Fittings and conduit bodies.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.
 - 2. Section 26 05 33.16 "Boxes."
 - 3. Section 26 05 53 "Electrical Identification."

1.2 REFERENCES

- A. ANSI C80.1 - Rigid Steel Conduit, Zinc Coated.
- B. ANSI C80.3 - Electrical Metallic Tubing, Zinc Coated.
- C. ANSI/NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.
- D. NECA "Standard of Installation."
- E. NEMA TC 3 - PVC Fittings for Use with Rigid PVC Conduit and Tubing.
- F. NFPA 70 - National Electrical Code.

1.3 DESIGN REQUIREMENTS

- A. Conduit Size: NFPA 70.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 33 00 "Submittal Procedures."
- B. Product Data: Provide for metallic conduit, flexible metal conduit, liquid tight flexible metal conduit, nonmetallic conduit, fittings and conduit bodies.

1.5 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Section 01 70 00 "Execution and Closeout Requirements."
- B. Accurately record actual routing of conduits.

1.6 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by UL as suitable for purpose specified and shown.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect, and handle products to site under provisions of Section 01 60 00 "Product Requirements."
- B. Accept conduit on-site. Inspect for damage.
- C. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.
- D. Protect PVC conduit from sunlight.

1.8 PROJECT CONDITIONS

- A. Verify that field measurements are as shown on Drawings.
- B. Verify routing and termination locations of conduit prior to rough-in.
- C. Conduit routing is shown on Drawings in approximate locations unless dimensioned. Route as required to complete wiring system.

PART 2 - PRODUCTS

2.1 CONDUIT REQUIREMENTS

- A. Minimum Size: 3/4-inch for all branch circuits located above ceiling. Contractor may use 1/2-inch conduit down the wall to receptacles and light switches.
- B. Wet and Damp Locations above grade: Use rigid steel or liquid tight flexible conduit.
- C. Dry Locations: Use electrical metallic tubing for concealed and exposed locations.
- D. Below Slab: Non-metallic PVC conduit is acceptable within limitations specified.
- E. Below Grade: Use only PVC coated rigid galvanized steel, wrapped rigid steel, or non-metallic PVC conduit within limitations specified.
- F. MC Cable: Shall not be utilized on this Project.

2.2 METAL CONDUIT

- A. Manufacturers:
 - 1. Allied.
 - 2. Wheatland.
 - 3. Substitutions: Under provisions of Section 01 60 00 "Product Requirements."
- B. Rigid Steel Conduit: ANSI C80.1.
- C. Fittings and Conduit Bodies: ANSI/NEMA FB 1; all steel fittings.

2.3 FLEXIBLE METAL CONDUIT

- A. Manufacturers:
 - 1. Allied Tube.
 - 2. Electri-Flex.
 - 3. Greenfield.
 - 4. Substitutions: Under provisions of Section 01 60 00 "Product Requirements."
- B. Description: Interlocked steel construction. Aluminum is not permitted.
- C. Fittings: ANSI/NEMA FB 1 with fittings approved for steel flex.
- D. Applications: Use for final connections to motorized equipment and connections to dry type transformers.

2.4 LIQUID TIGHT FLEXIBLE METAL CONDUIT

- A. Manufacturers:
 - 1. Electri-flex.
 - 2. Ultratite.
 - 3. Substitutions: Under provisions of Section 01 60 00 "Product Requirements."
- B. Description: Interlocked steel construction with PVC jacket.
- C. Fittings: ANSI/NEMA FB 1.
- D. Applications: Use for final connections to motorized equipment in exterior locations.

2.5 ELECTRICAL METALLIC TUBING (EMT)

- A. Manufacturers:
 - 1. Allied.
 - 2. Substitutions: Under provisions of Section 01 60 00 "Product Requirements."
- B. Description: ANSI C80.3; galvanized tubing.
- C. Fittings and Conduit Bodies: ANSI/NEMA FB 1; all steel, compression.
- D. Applications: Do not use below grade or in exterior locations. Use only in interior locations.

2.6 PVC COATED METAL CONDUIT

- A. Manufacturers:
 - 1. Levy.
 - 2. Robroy Industries.
 - 3. Substitutions: Under provisions of Section 01 60 00 "Product Requirements."
- B. Description: NEMA RN-1, rigid steel conduit with external PVC coating, 20 mil thick.
- C. General: Protective layer may be factory applied or galvanized rigid steel conduit may be applied with two layers of corrosion resistant tape.
- D. Fittings and Conduit Bodies: ANSI/NEMA FB 1; steel fittings with external PVC coatings to match conduit.

2.7 NON-METALLIC PVC CONDUIT

- A. Manufacturers:
 - 1. Allied.
 - 2. Carlon.
 - 3. Substitutions: Under provisions of Section 01 60 00 "Product Requirements."
- B. Description: NEMA TC2; Schedule 40 PVC. Flame retardant type resistant to bending and cracking.
- C. Fittings and conduit bodies: NEMA TC3.
- D. Vertical risers and ells installed below grade shall be rigid steel with wrapping.
- E. Do not use above grade.
- F. Joints made with PVC fittings shall be applied with solvent compound after thorough cleaning.
- G. Refer to Part 3. Do not use PVC conduit for conduits passing vertically through the slab.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install conduit in accordance with NECA "Standard of Installation."
- B. Install nonmetallic conduit in accordance with manufacturer's instructions.
- C. Arrange supports to prevent misalignment during wiring installation.
- D. Support conduit using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.
- E. Group related conduits; support using conduit rack. Construct rack using steel channel.
- F. Fasten conduit supports to building structure and surfaces under provisions of Section 26 05 29 "Supporting Devices."
- G. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports.
- H. Do not attach conduit to ceiling support wires.
- I. Arrange conduit to maintain headroom and present neat appearance.
- J. Route exposed conduit parallel and perpendicular to walls.
- K. Route conduit installed above accessible ceilings parallel and perpendicular to walls.
- L. Maintain adequate clearance between conduit and piping.
- M. Maintain 12-inch clearance between conduit and surfaces with temperatures exceeding 104 degrees F.
- N. Cut conduit square using saw or pipecutter; de-burr cut ends.
- O. Bring conduit to shoulder of fittings; fasten securely.
- P. Use conduit hubs or sealing locknuts to fasten conduit to sheet metal boxes in damp and wet locations and to cast boxes.
- Q. Install no more than equivalent of three 90-degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams. Use factory elbows for bends in metal conduit larger than 2-inch size.
- R. Avoid moisture traps; provide junction box with drain fitting at low points in conduit system.
- S. Provide suitable fittings to accommodate expansion and deflection where conduit crosses control and expansion joints.
- T. Provide suitable pull string in each empty conduit except sleeves and nipples.
- U. Use suitable caps to protect installed conduit against entrance of dirt and moisture.
- V. Ground and bond conduit under provisions of Section 26 05 26 "Grounding and Bonding."
- W. Identify conduit under provisions of Section 26 05 53 "Electrical Identification."
- X. Ducts shall be cleaned with a flexible mandrel assembly.
- Y. All conduits passing vertically through slabs or through earth on grade shall be PVC-coated, rigid steel. Rigid steel conduits shall be applied with protective coatings as indicated herein. All transitions from PVC to rigid steel shall occur below the slab.
- Z. Underground branch circuit extensions to parking lot lighting fixtures and other branch circuits may be direct buried PVC conduit. Service entrance PVC conduit shall be concrete encased in accordance with the Drawings unless otherwise approved by Engineer.
- AA. Minimum cover for underground conduits shall be 24 inches unless otherwise noted.

END OF SECTION

SECTION 26 05 33.16 - BOXES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Wall and ceiling outlet boxes.
 - 2. Pull and junction boxes.
 - 3. Floor boxes.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.
 - 2. Section 26 27 26 "Wiring Devices" for wall plates in finished areas.

1.2 REFERENCES

- A. NECA - Standard of Installation.
- B. NEMA FB 1 - Fittings and Supports for Conduit and Cable Assemblies.
- C. NEMA OS 1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports.
- D. NEMA 250 - Enclosures for Electrical Equipment (1,000 Volts Maximum).
- E. NFPA 70 - National Electrical Code.

1.3 SUBMITTALS FOR CLOSEOUT

- A. Refer to Section 01 70 00 "Execution and Closeout Requirements" for submittals for Project closeout.
- B. Record actual locations and mounting heights of outlet, pull, and junction boxes on Project record documents.

1.4 REGULATORY REQUIREMENTS

- A. Conform to requirements of NFPA 70.
- B. Provide Products listed and classified by UL as suitable for the purpose specified and indicated.

PART 2 - PRODUCTS

2.1 PULL AND JUNCTION BOXES

- A. Sheet Metal Boxes: NEMA OS 1, galvanized steel.
- B. Surface Mounted Cast Metal Box: NEMA 250, Type 4; flat-flanged, surface mounted junction box.
- C. Material: Galvanized cast iron.
- D. Cover: Furnish with ground flange, neoprene gasket, and stainless-steel cover screws.
- E. Fiberglass boxes are allowed in landscaping areas. Equipment shall be pedestrian rated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify locations of outlets in all locations areas prior to rough-in.

3.2 INSTALLATION

- A. Install boxes in accordance with NECA "Standard of Installation."
- B. Install in locations as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections and compliance with regulatory requirements.
- C. Set wall mounted boxes at elevations to accommodate mounting heights specified in Section for outlet device.
- D. Electrical boxes are shown on Drawings in approximate locations unless dimensioned. Adjust box location up to 10 feet if required to accommodate intended purpose.
- E. Orient boxes to accommodate wiring devices oriented as specified in Section 26 27 26 "Wiring Devices."
- F. Maintain headroom and present neat mechanical appearance.
- G. Locate outlet boxes to allow luminaires positioned as shown on reflected ceiling plan.
- H. Support boxes independently of conduit.
- I. Use gang box where more than one device is mounted together. Do not use sectional box.
- J. Use gang box with plaster ring for single device outlets.
- K. Use cast outlet box in exterior locations exposed to the weather and wet locations and at all locations serving kitchen equipment.
- L. Large Pull Boxes: Use hinged enclosure in interior dry locations, surface-mounted cast metal box in other locations.
- M. Coordinate with other trades for box rough-in, such that control devices are grouped (i.e., thermostats, wall switches, volume controls, etc.).

3.3 INTERFACE WITH OTHER PRODUCTS

- A. Coordinate installation of outlet box for equipment connected under Section 26 05 19 "Equipment Wiring Systems."

3.4 ADJUSTING

- A. Refer to Section 01 70 00 "Execution and Closeout Requirements" for adjusting installed Work.
- B. Adjust flush-mounting outlets to make front flush with finished wall material.
- C. Install knockout closures in unused box openings.

3.5 CLEANING

- A. Refer to Section 01 70 00 "Execution and Closeout Requirements" for cleaning installed Work.
- B. Clean interior of boxes to remove dust, debris, and other material.
- C. Clean exposed surfaces and restore finish.

3.6 REPAIR

- A. Repair any areas or surfaces damaged during conduit installation.
- B. Paint (resurface) to original condition.

END OF SECTION

SECTION 26 05 53 - ELECTRICAL IDENTIFICATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Nameplates and labels.
 - 2. Wire, conduit, and box markers.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.

1.2 REFERENCES

- A. ANSI/NFPA 70 - National Electrical Code.

PART 2 - PRODUCTS

2.1 NAMEPLATES AND LABELS

- A. Nameplates and Labels: Engraved 3-layer laminated plastic, white letters on black background.
- B. Locations:
 - 1. Each electrical distribution and control equipment enclosure.
 - 2. Communication cabinets and computer cabinets.
 - 3. Field disconnects, start stop stations, control panels.
- C. Letter Size:
 - 1. Use 1/4-inch letters for identifying individual equipment and loads.
 - 2. Use 1/4-inch letters for identifying grouped equipment and loads.
 - 3. Use 3/8-inch letters for identifying main disconnect equipment.
 - 4. Use 1/4-inch letters for identifying receptacle and light switches.

2.2 WIRE, CONDUIT, AND BOX MARKERS

- A. Description: Brady B-321 Heat-Shrink Polyolefin markers. Typed label to identify each termination end point of the conductor. DC conductors shall identify polarity.
- B. Locations: Each conductor at wireway, pull boxes, outlet and junction boxes, and each load connection. All conduit penetrations identifying the location of each end.
- C. Legend:
 - 1. Power and Lighting Circuits: Branch circuit or feeder number indicated on Drawings.
- D. Boxes:
 - 1. Label each junction box in accessible locations to indicate the type of system (i.e.; security; power circuit - 1, 3, 5; etc.).
 - 2. Boxes serving fire alarm system shall have box covers painted red.

- E. Provide label in each light switch and receptacle back box.
- F. Panelboards:
 - 1. Provide phenolic label with maximum available fault current at main panelboard. Utilize number as indicated in panel schedule.
 - 2. Provide warning labels with arc-flash hazard warning for all electrical equipment as indicated in Article 110.16 of NEC.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Degrease and clean surfaces to receive nameplates and labels.

3.2 APPLICATION

- A. Install nameplate and label parallel to equipment lines.
- B. Secure nameplate to equipment front using screws or rivets.
- C. Identify underground conduits using underground warning tape. Install 1 tape per trench at 12 inches below finished grade. Identify all conduit at exposed locations into all boxes, cabinets, etc. (see Specification Section 26 05 00 "Basic Electrical Methods").
- D. Identify all conductors at every termination indicating endpoints of termination and tag identification as required.
- E. Color Coding for Phase Identification:

120/208 Volts	Phase	277/480 Volts
Black	A	Brown
Red	B	Orange
Blue	C	Yellow
White	Neutral	Gray
Green	Ground	Green

- F.
- G. Conductor phase and voltage identification shall be made by color-coded insulation for all conductors smaller than No. 6 AWG. For conductors No. 6 AWG and larger, identification shall be made by color-coded insulation, or conductors with black insulation may be furnished and identified by colored electrical tape. Conductor identification shall be provided within each enclosure where a tap, splice, or termination is made.

END OF SECTION

SECTION 26 24 16 - PANELBOARDS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Distribution and branch circuit panelboards.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.
 - 2. Section 26 05 29 "Supporting Devices."
 - 3. Section 26 05 26 "Grounding and Bonding."
 - 4. Section 26 05 53 "Electrical Identification" for engraved nameplates.

1.2 REFERENCES

- A. NECA (National Electrical Contractors Association) "Standard of Installation."
- B. NEMA AB 1 - Molded Case Circuit Breakers.
- C. NEMA ICS 2 - Industrial Control Devices, Controllers, and Assemblies.
- D. NEMA KS 1 - Enclosed Switches.
- E. NEMA PB 1 - Panelboards.
- F. NEMA PB 1.1 - Instructions for Safe Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less.
- G. NFPA 70 - National Electrical Code.

1.3 SUBMITTALS

- A. Shop Drawings: Indicate outline and support point dimensions, voltage, main bus ampacity, integrated short circuit ampere rating, circuit breaker, fusible switch arrangement, and sizes.
- B. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of product.

1.4 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of General Conditions. Record actual locations of products; indicate actual branch circuit arrangement.

1.5 OPERATION AND MAINTENANCE DATA

- A. Submit under provisions of General Conditions. Maintenance Data: Include spare parts data listing; and recommended maintenance procedures and intervals.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with NECA Standard of Installation.

1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum 5 years' experience.

1.8 REGULATORY REQUIREMENTS

- A. Conform to requirements of NFPA 70. Furnish products listed and classified by UL as suitable for purpose specified and indicated.

1.9 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated.

1.10 MAINTENANCE MATERIALS

- A. Provide maintenance materials under provisions of General Conditions. Provide 2 of each panelboard key if required.

PART 2 - PRODUCTS

2.1 PANELBOARDS

- A. Manufacturers:
 - 1. Eaton.
 - 2. G.E.
 - 3. Siemens.
 - 4. Square-D.
- B. Description: NEMA PB-1, circuit breaker type.
- C. Panelboard Bus: Copper with ratings as indicated. Provide a copper ground bus in each panelboard.
- D. Minimum integrated short circuit rating: Fully rated devices with minimum levels as indicated. Series rated systems will not be allowed. Minimum calculated values are labeled on each panelboard and are indicated as "AIC."
- E. Molded Case Circuit Breakers: NEMA AB 1, bolt-on, circuit breakers with integral thermal and instantaneous magnetic trip in each pole. Provide circuit breakers UL listed as type HACR for air-conditioning equipment loads and type SWD for switching applications.
- F. Enclosure: NEMA PB-1, Type 1.
- G. Cabinet Front: Surface 3R as indicated on the Drawings, fastened with concealed trim clamps, hinged door with flush lock, metal directory frame, and finished in manufacturer's standard gray enamel.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install panelboards in accordance with NEMA PB 1.1. Install panelboards plumb. Provide supports in accordance with Drawings and Section 26 05 29 "Supporting Devices." Height: 6 feet maximum to top of panelboard. Provide filler plates for unused spaces in panelboards. Provide typed circuit directory for each branch circuit panelboard. Revise directory to reflect circuiting changes required to balance phase loads. Spare slots shall be labeled as such in erasable pencil on directory. Provide engraved plastic nameplates under the provisions of Section 26 05 53 "Electrical Identification."
- B. Ground each panelboard in accordance with Section 26 05 26 "Grounding and Bonding."

3.2 FIELD QUALITY CONTROL

- A. Field inspection and test for grounds on each circuit after installation is completed. Measure steady state load currents at each panelboard feeder; rearrange circuits in the panelboard to balance the phase loads to within 20 percent of each other. Maintain proper phasing for multi-wire branch circuits.
- B. Visual and Mechanical Inspection: Inspect for physical damage, proper alignment, anchorage, and grounding. Check proper installation and tightness of connections for circuit breakers, fusible switches, and fuses.

END OF SECTION

SECTION 26 27 26 - WIRING DEVICES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Receptacles.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.
 - 2. Section 26 05 33.16 "Boxes."

1.2 REFERENCES

- A. NECA - Standard of Installation.
- B. NEMA WD 1 - General Requirements for Wiring Devices.
- C. NEMA WD 6 - Wiring Device - Dimensional Requirements.
- D. NFPA 70 - National Electrical Code.

1.3 SUBMITTALS FOR REVIEW

- A. Refer to Section 01 33 00 "Submittal Procedures."
- B. Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.
- C. Manufacturers with similar catalog numbers will not be considered as a basis for an equivalent product.

1.4 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum 3 years' documented experience.

1.5 REGULATORY REQUIREMENTS

- A. Conform to requirements of NFPA 70.
- B. Provide products listed and classified by UL as suitable for the purpose specified and indicated.

PART 2 - PRODUCTS

2.1 RECEPTACLES

- A. Manufacturers:
 - 1. Hubbell PRO 5352-I.
 - 2. Substitutions: Refer to Section 01 60 00 "Product Requirements." Equivalent.
- B. Description: NEMA WD 1, Heavy-duty, general-use receptacle, with triple wipe contacts and grounding contacts integral with backstrap (no rivets).

- C. Device Body: Ivory plastic.
- D. Configuration: NEMA WD 6, type as specified and indicated.
- E. Convenience Receptacle: Type 5-20.
- F. GFCI Receptacle: Convenience receptacle with integral ground fault circuit interrupter to meet regulatory requirements. Hubbell GF5352-I or equivalent.

2.2 WALL PLATES

- A. Decorative Cover Plate: Stainless-steel.
- B. Weatherproof Cover Plate: Gasketed cast metal with gasketed device "IN-USE" cover on exterior devices.
- C. Surface Mounted Plates: Galvanized steel plates.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Refer to Section 01 30 00 "Administrative Requirements" for verification of existing conditions prior to beginning Work.
- B. Verify that outlet boxes are installed at proper height.
- C. Verify that wall openings are neatly cut and will be completely covered by wall plates.
- D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.
- E. Verify installation location of all boxes to be installed in millwork with Architect.

3.2 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean debris from outlet boxes.

3.3 INSTALLATION

- A. Install in accordance with NECA "Standard of Installation."
- B. Install devices plumb and level.
- C. Install switches with OFF position down.
- D. Do not share neutral conductor on load side of dimmers.
- E. Install receptacles with grounding pole located on the bottom as required by Owner.
- F. Connect wiring device grounding terminal to branch circuit equipment grounding conductor.
- G. Connect wiring devices by wrapping conductor around screw terminal.
- H. Use jumbo size plates for outlets installed in masonry walls.
- I. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface mounted outlets.
- J. Install blank cover plate to match other wall plates on all unused boxes.

3.4 INTERFACE WITH OTHER PRODUCTS

- A. Coordinate locations of outlet boxes provided under Section 26 05 33.16 "Boxes" to obtain mounting heights specified and indicated on Drawings.
- B. Install convenience receptacle 18 inches above finished floor.

3.5 FIELD QUALITY CONTROL

- A. Refer to Section 01 40 00 "Quality Requirements" for field inspection, testing, adjusting, and balancing.
- B. Inspect each wiring device for defects.
- C. Operate each wall switch with circuit energized and verify proper operation.
- D. Verify that each receptacle device is energized.
- E. Test each receptacle device for proper polarity.
- F. Test each GFCI receptacle device for proper operation.

3.6 ADJUSTING

- A. Refer to Section 01 70 00 "Execution and Closeout Requirements" for adjusting installed Work.
- B. Adjust devices and wall plates to be flush and level.

3.7 CLEANING

- A. Refer to Section 01 70 00 "Execution and Closeout Requirements" for cleaning installed Work.
- B. Clean exposed surfaces to remove splatters and restore finish.

END OF SECTION

SECTION 26 28 16.16 - ENCLOSED SWITCHES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Fusible switches.
 - 2. Non-fusible switches.
 - 3. Fuses.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.

1.2 REFERENCES

- A. NEMA KS 1 - Enclosed Switches.
- B. NFPA 70 - National Electrical Code.
- C. UL 198C - High-Interrupting Capacity Fuses; Current Limiting Type.
- D. UL 198E - Class R Fuses.
- E. NEMA AB 1 - Molded Case Circuit Breakers.
- F. NECA - Standard of Installation.

1.3 SUBMITTALS

- A. Submit under provisions of Section 01 33 00 "Submittal Procedures."
- B. Product Data: Provide switch ratings and enclosure dimensions.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with NECA Standard of Installation.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum 3 years' documented experience.

1.6 REGULATORY REQUIREMENTS

- A. Conform to requirements of NFPA 70.
- B. Furnish products listed and classified by UL as suitable for purpose specified and shown.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Eaton.
- B. General Electric.
- C. Siemens.
- D. Square D.

2.2 ENCLOSED SWITCHES

- A. Fusible or Non-fusible as indicated.
- B. Switch Assemblies: NEMA KS 1, Type HD load interrupter enclosed knife switch with externally operable handle interlocked to prevent opening front cover with switch in ON position. Handle lockable in OFF position.
- C. Fuse Clips: Designed to accommodate NEMA FU1, class R fuses.
- D. Enclosures: NEMA KS 1.
- E. Interior Dry Locations: Type 1.
- F. Exterior Locations: Type 3R or 4.
- G. NEMA ratings of enclosures as specified on Drawings take precedence over location Specification.
- H. Current rating of switch to be equal to or greater than that of the circuit it is interrupting.

2.3 FUSES

- A. Manufacturers:
 - 1. Bussman.
 - 2. Gould Shawmut.
 - 3. Littlefuse.
- B. Dimensions and Performance: NEMA FU 1, Class as specified or indicated.
- C. Voltage: Provide fuses with suitable voltage ratings for phase to phase voltages.
- D. Service Entrance: Class L, Bussman Low-peak or equivalent.
- E. General Purpose Loads: Class RK1, Bussman Low-peak or equivalent.
- F. Motor Loads: Class RK5, Bussman Fusetron or equivalent.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install in accordance with NECA Standard of Installation.
- B. Install fuses in all fusible disconnects.
- C. Apply adhesive tag on the inside door of all disconnects indicating the NEMA class fuse and size installed.
- D. Provide a disconnect switch for all equipment where indicated or required by the National Electrical Code. Coordinate with other disciplines to determine where disconnects are furnished with equipment.

END OF SECTION

SECTION 26 56 68 - EXTERIOR ATHLETIC LIGHTING (MUSCO)

PART 1 - GENERAL

1.1 SUMMARY

- A. Work covered by this section of the Specifications shall conform to the Contract documents, engineering Plans as well as state and local codes.
- B. The purpose of these Specifications is to define the lighting system performance and design standards for Ransom Canyon Jones-Warner Park using an LED Lighting source. The manufacturer/ Contractor shall supply lighting equipment to meet or exceed the standards set forth in these Specifications.
- C. The sports lighting will be for the following venues:
 - 1. Pickleball/Tennis.
 - 2. Basketball (Alternate).
- D. The primary goals of this sports lighting Project are:
 - 1. **Guaranteed Light Levels:** Selection of appropriate light levels impacts the safety of players and the enjoyment of spectators. Therefore, light levels are guaranteed to not drop below specified target values for a period of 25 years.
 - 2. **Environmental Light Control:** It is the primary goal of this Project to minimize spill light to adjoining properties and glare to players, spectators, and neighbors.
 - 3. **Cost of Ownership:** To reduce the operating budget, the preferred lighting system shall be energy efficient and cost effective to operate. All maintenance costs shall be eliminated for the duration of the warranty.
 - 4. All lighting designs shall comply with Lighting Standard.

1.2 ONFIELD LIGHTING PERFORMANCE

- A. **Illumination Levels and Design Factors:** Playing surfaces shall be lit to an average target illumination level and uniformity as specified in the chart below. Lighting manufacturers will provide a guarantee that light levels will be sustained over the life of the warranty period. Lighting calculations shall be developed, and field measurements taken on the grid spacing with the minimum number of grid points specified below.
- B. Manufacturers will provide lumen maintenance data of the LED luminaires used per TM-21-11 and will incorporate the lumen maintenance projections into the lighting designs to ensure target light levels are achieved throughout the guaranteed period of the system. Per IES guidelines, lumen maintenance hours should be reported based on the 6x multiplier of testing hours.

Area of Lighting	Average Target Illumination Levels	Maximum to Minimum Uniformity Ratio	Grid Points	Grid Spacing
Pickleball	20 footcandles	3:1	72	10' x 10'
Tennis	20 footcandles	3:1	15	20' x 20'
Basketball	20 footcandles	4:1	40	10' x 10'

- C. Color Temperature: The lighting system shall have a minimum color temperature of 5700K and a CRI of 75.
- D. Playability: Lighting design and luminaire selection should be optimized for playability by reducing glare on field.
 - 1. Aiming Angles: To reduce glare, luminaire aiming should ensure the top of the luminaire field angle (based on sample photometric reports) is a minimum of 10 degrees below horizontal.
 - 2. Glare Control Technology – Luminaires selected should have glare control technology including, but not limited to external visors, internal shields, and louvres. No symmetrical beam patterns are acceptable.
 - 3. Mounting Heights: To ensure proper aiming angles, minimum mountings heights shall be as described below. Higher mounting heights may be necessary for luminaire with lesser glare control to meet field angle requirements of section 1.2.C.1.

# of Poles	Pole Designation	Pole Height
4	T1-T4	40'
1	B1	40'

1.3 ENVIRONMENTAL LIGHT CONTROL

- A. Light Control Luminaires: All luminaires shall utilize spill light and glare control devices including, but not limited to, internal shields, louvers, and external shields. No symmetrical beam patterns are accepted.
- B. Lighting Ordinance: In accordance with Ransom Canyon, TX lighting ordinance, maximum initial horizontal illumination at the property line shall not exceed 0.01 footcandles.
- C. Spill Light and Glare Control: To minimize impact on adjacent properties, spill light and candela values must not exceed the following levels taken at 3 feet above grade.

	Average	Maximum
Specified Spill Line Horizontal Footcandles	0.01 fc	0.10 fc
Specified Spill Line Max Vertical Footcandles	0.03 fc	0.23 fc
Specified Spill Line Max Candela (taken at 5 ft above grade)		2314 cd

- D. Spill Scans: Spill scans must be submitted indicating the amount of horizontal and vertical footcandles along the specified lines. Light levels shall be provided in 30-foot intervals along the boundary line at 3-foot above grade.
- E. Sample Photometry: The first page of a photometric report for all luminaire types proposed showing horizontal and vertical axial candle power shall be provided to demonstrate the capability of achieving the specified performance. Reports shall be certified by a qualified testing laboratory with a minimum of 5 years' experience or by a manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products. A summary of the horizontal and vertical aiming angles for each luminaire shall be included with the photometric report.

- F. Field Verification: Lighting manufacturer shall supply field verification of environmental light control using a meter calibrated within the last 12 months:
 - 1. Spill verification: Illumination levels shall be taken in accordance with IESNA RP-6-22. The light sensing surface of the light meter should be held 36 inches above the playing surface with the sensing surface horizontal (for horizontal readings) or vertically pointed at the brightest light bank (for max vertical readings).

1.4 COST OF OWNERSHIP

- A. Manufacturer shall submit a 25-year Cost of Ownership summary that includes energy consumption, anticipated maintenance costs, and control costs. All costs associated with faulty luminaire replacement - equipment rentals, removal and installation labor, and shipping - are to be included in the maintenance costs.

PART 2 - PRODUCT

2.1 SPORTS LIGHTING SYSTEM CONSTRUCTION

- A. Manufacturing Requirements: All components shall be designed and manufactured as a system. All luminaires, wire harnesses, drivers and other enclosures shall be factory assembled, aimed, wired, and tested.
- B. Durability: All exposed components shall be constructed of corrosion resistant material and/or coated to help prevent corrosion. All exposed carbon steel shall be hot dip galvanized per ASTM A123. All exposed aluminum shall be powder coated with high performance polyester or anodized. All exterior reflective inserts shall be anodized, coated, and protected from direct environmental exposure to prevent reflective degradation or corrosion. All exposed hardware and fasteners shall be stainless steel, passivated and coated with aluminum-based thermosetting epoxy resin for protection against corrosion and stress corrosion cracking. Structural fasteners may be carbon steel and galvanized meeting ASTM A153 and ISO/EN 1461 (for hot dipped galvanizing), or ASTM B695 (for mechanical galvanizing). All wiring shall be enclosed within the cross-arms, pole, or electrical components enclosure.
- C. System Description: Lighting system shall consist of the following:
 - 1. Galvanized steel poles and cross-arm assembly.
 - 2. Non-approved pole technology:
 - a. Direct bury steel poles which utilize the extended portion of the steel shaft for their foundation will not be accepted due to potential for internal and external corrosive reaction to the soils and long-term performance concerns.
 - 3. Lighting systems shall use concrete foundations. See Section 2.4 for details.
 - a. For a foundation using a pre-stressed concrete base embedded in concrete backfill the concrete shall be air-entrained and have a minimum compressive design strength at 28 days of 3,000 PSI. 3,000 PSI concrete specified for early pole erection, actual required minimum allowable concrete strength is 1,000 PSI. All piers and concrete backfill must bear on and against firm undisturbed soil.
 - b. For anchor bolt foundations or foundations using a pre-stressed concrete base in a suspended pier or re-enforced pier design pole erection may occur after 7 days. Or after a concrete sample from the same batch achieves a certain strength.

4. Manufacturer will supply all drivers and supporting electrical equipment:
 - a. Remote drivers and supporting electrical equipment shall be mounted approximately 10 feet above grade in aluminum enclosures. The enclosures shall be touch-safe and include drivers and fusing with indicator lights on fuses to notify when a fuse is to be replaced for each luminaire. Disconnect per circuit for each pole structure will be located in the enclosure.
 - b. Manufacturer shall provide surge protection at the pole equal to or greater than 40 kA for each line to ground (Common Mode) as recommended by IEEE C62.41.2_2002.
 5. Wire harness complete with an abrasion protection sleeve, strain relief and plug-in connections for fast, trouble-free installation.
 6. All luminaires, visors, and cross-arm assemblies shall withstand 150 mi/h winds and maintain luminaire aiming alignment.
 7. Contactor cabinet to provide on-off control.
 8. Manufacturer shall provide lightning grounding as defined by NFPA 780 and be UL Listed per UL 96 and UL 96A.
 - a. Integrated grounding via concrete encased electrode grounding system.
 - b. If grounding is not integrated into the structure, the manufacturer shall supply grounding electrodes, copper down conductors, and exothermic weld kits. Electrodes and conductors shall be sized as required by NFPA 780. The grounding electrode shall be minimum size of 5/8-inch diameter and 8 feet long, with a minimum of 10 feet embedment. Grounding electrode shall be connected to the structure by a grounding electrode conductor with a minimum size of 2 AWG for poles with 75 feet mounting height or less, and 2/0 AWG for poles with more than 75 feet mounting height.
- D. Safety: All system components shall be UL listed for the appropriate application.

2.2 ELECTRICAL

- A. Electric Power Requirements for the Sports Lighting Equipment:
 1. Electric power: 240 Volt, 14. Phase
 2. Maximum total voltage drop: Voltage drop to the disconnect switch located on the poles shall not exceed 3 percent of the rated voltage.
- B. Energy Consumption: The kW consumption for the field lighting system shall be 4.32kW.

2.3 CONTROL

- A. Instant On/Off Capabilities: System shall provide for instant on/off of luminaires.
- B. Lighting contactor cabinet(s) constructed of NEMA Type 4 aluminum, designed for easy installation with contactors, labeled to match field diagrams and electrical design. Manual off-on-auto selector switches shall be provided.
- C. Contactor control of lights: To minimize wear on drivers and other electrical components and prevent lights from turning on due to communication loss, circuits must be controlled via contactor switching, not dimming driver output to zero.
- D. Communication with luminaire drivers: Control system shall interface with drivers in electrical components enclosures by means of powerline communication

2.4 STRUCTURAL PARAMETERS (Use for 2018 IBC)

- A. Wind Loads: Wind loads shall be based on the 2018 International Building Code. Wind loads to be calculated using ASCE 7-16, an ultimate design wind speed of 110 mph and exposure category C.
- B. Pole Structural Design: The stress analysis and safety factor of the poles shall conform to 2013 AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals (LTS-6).
Foundation Design: The foundation design shall be based on soils that meet or exceed those of a Class 5 material as defined by 2018 IBC Table 1806.2.

PART 3 - EXECUTION

3.1 SOIL QUALITY CONTROL

- A. It shall be the Contractor's responsibility to notify the Owner if soil conditions exist other than those on which the foundation design is based, or if the soil cannot be readily excavated. Contractor may issue a change order request/ estimate for the Owner's approval/ payment for additional costs associated with:
 - 1. Providing engineered foundation embedment design by a Registered Engineer in the State of Texas for soils other than specified soil conditions;
 - 2. Additional materials required to achieve alternate foundation;
 - 3. Excavation and removal of materials other than normal soils, such as rock, caliche, etc.

3.2 DELIVERY TIMING

- A. Delivery Timing Equipment On-Site: The equipment must be on-site 10-12 weeks from receipt of approved submittals and receipt of complete order information.

3.3 FIELD QUALITY CONTROL

- A. Illumination Measurements: Upon substantial completion of the Project and in the presence of the Contractor, Project Engineer, Owner's Representative, and Manufacturer's Representative, illumination measurements shall be taken and verified. The illumination measurements shall be conducted in accordance with IESNA RP-6-22.
- B. Field Light Level Accountability
 - 1. Light levels are guaranteed not to fall below the target maintained light levels for the entire warranty period of 25 years. These levels will be specifically stated as "guaranteed" on the illumination summary provided by the manufacturer.
 - 2. The contractor/manufacturer shall be responsible for conducting initial light level testing and an additional inspection of the system, in the presence of the Owner, 1-year from the date of commissioning of the lighting.
 - 3. The Contractor/ manufacturer will be held responsible for any and all changes needed to bring these fields back to compliance for light levels and uniformities. Contractor/ manufacturer will be held responsible for any damage to the fields during these repairs.

- C. Correcting Non-Conformance: If, in the opinion of the Owner or his appointed Representative, the actual performance levels including footcandles, uniformity ratios are not in conformance with the requirements of the performance Specifications and submitted information, the Manufacturer shall be required to make adjustments to meet Specifications and satisfy Owner.

3.4 WARRANTY AND GUARANTEE

- A. 25-Year Warranty: Each manufacturer shall supply a signed warranty covering the entire system for 25 years from the date of shipment. Warranty shall guarantee specified light levels. Manufacturer shall maintain specifically funded financial reserves to assure fulfillment of the warranty for the full term. Warranty does not cover weather conditions events such as lightning or hail damage, improper installation, vandalism or abuse, unauthorized repairs or alterations, or products made by other manufacturers.
- B. Maintenance: Manufacturer shall monitor the performance of the lighting system, including on/off status, hours of usage and luminaire outage for 25 years from the date of equipment shipment. Parts and labor shall be covered such that individual luminaire outages will be repaired when the usage of any field is materially impacted. Manufacturer is responsible for removal and replacement of failed luminaires, including all parts, labor, shipping, and equipment rental associated with maintenance. Owner agrees to check fuses in the event of a luminaire outage.

3.5 DESIGN APPROVAL

- A. PRE-PROPOSAL SUBMITTAL REQUIREMENTS (Non-Musco)
 - 1. Design Approval: The Owner / engineer will review pre-proposal submittals per section 4.1.B from all the manufacturers to ensure compliance to the Specification 10 days prior to Proposal. If the design meets the design requirements of the Specifications, a letter and/or addendum will be issued to the manufacturer indicating approval for the specific design submitted.
 - 2. Approved Product: Musco's Light-Structure System™ with TLC for LED® is the approved product. All substitutions must provide a complete submittal package for approval as outlined in Submittal Information at the end of this section at least 10 days prior to Proposal. Special manufacturing to meet the standards of this Specification may be required. An Addendum will be issued prior to Proposal listing any other approved lighting manufacturers and designs.
 - 3. All listed manufacturers not pre-approved shall submit the information at the end of this Section at least 10 days prior to Proposal. An addendum will be issued prior to Proposal; listing approved lighting manufacturers and the design method to be used.
 - 4. Proposers are required to Proposal only products that have been approved by this Specification or addendum by the Owner or Owner's representative. Proposals received that do not utilize an approved system/design, will be rejected.

**REQUIRED SUBMITTAL INFORMATION FOR ALL MANUFACTURERS
 (NOT PRE-APPROVED) 10 DAYS PRIOR TO PROPOSAL**

*All items listed below are mandatory, shall comply with the Specification and be submitted according to pre-proposal submittal requirements. Complete the Yes/No column to indicate compliance (Y) or noncompliance (N) for each item. **Submit checklist below with submittal.***

Yes / No	Tab	Item	Description
	A	Letter/ Checklist	Listing of all information being submitted must be included on the table of contents. List the name of the manufacturer's local representative and his/her phone number. Signed submittal checklist to be included.
	B	Equipment Layout	Drawing(s) showing field layouts with pole locations
	C	On Field Lighting Design	Lighting design Drawing(s) showing: <ol style="list-style-type: none"> a. Field Name, date, file number, prepared by b. Outline of field(s) being lighted, as well as pole locations referenced to the center of the field (x & y), Illuminance levels at grid spacing specified c. Pole height, number of fixtures per pole, horizontal and vertical aiming angles, as well as luminaire information including wattage, lumens, and optics d. Height of light test meter above field surface. e. Summary table showing the number and spacing of grid points; average, minimum and maximum illuminance levels in foot candles (fc); uniformity including maximum to minimum ratio, coefficient of variance (CV), coefficient of utilization (CU) uniformity gradient; number of luminaires, total kilowatts, average tilt factor; light loss factor.
	D	Off Field Lighting Design	Lighting design Drawing showing initial spill light levels along the boundary line (defined on Proposal Drawings) in footcandles. Lighting design shows glare along the boundary line in candela. Light levels shall be taken at 30-foot intervals along the boundary line. Readings shall be taken with the meter orientation at both horizontal and aimed towards the most intense bank of lights.
	E	Photometric Report	Provide first page of photometric report for all luminaire types being proposed showing candela tabulations as defined by IESNA Publication LM-35-02. Photometric data shall be certified by laboratory with current National Voluntary Laboratory Accreditation Program or an independent testing facility with over 5 years' experience.
	F	Performance Guarantee	Provide performance guarantee including a written commitment to undertake all corrections required to meet the performance requirements noted in these Specifications at no expense to the Owner. Light levels must be guaranteed to not fall below target levels for warranty period.
	G	Structural Calculations	Pole structural calculations and foundation design showing foundation shape, depth backfill requirements, rebar and anchor bolts (if required). Pole base reaction forces shall be shown on the foundation Drawing along with soil bearing pressures. Design must be stamped by a structural engineer in the state of Texas, if required by Owner. (May be supplied upon award).

Yes / No	Tab	Item	Description
	I	Electrical Distribution Plans	Manufacturer proposes an alternate product must include a revised electrical distribution plan including changes to service entrance, panels and wire sizing, signed by a licensed Electrical Engineer in the state of Texas.
	J	Warranty	Provide written warranty information including all terms and conditions. Provide ten (10) references of customers currently under specified warranty in the state of Texas.
	K	Project References	Manufacturer to provide a list of Projects where the technology and specific fixture proposed for this Project has been installed in the state of Texas. Reference list will include Project name, Project city, installation date, and if requested, contact name and contact phone number.
	L	Product Information	Complete bill of material and current brochures/cut sheets for all products being provided.
	M	Delivery	Manufacturer shall supply an expected delivery timeframe from receipt of approved submittals and complete order information.
	N	Non-Compliance	Manufacturer shall list all items that do not comply with the Specifications. If in full compliance, tab may be omitted.
	O	Cost of Ownership	Document cost of ownership as defined in the Specification. Identify energy costs for operating the luminaires. Maintenance cost for the system must be included. All costs should be based on 25 Years
	P	Environmental Light Control Design	Environmental glare impact scans must be submitted showing the maximum candela from the field edge on a map of the surrounding area until 500 candela or less is achieved.

The information supplied herein shall be used for the purpose of complying with the Specifications for Ransom Canyon Jones-Warner Park. By signing below, I agree that all requirements of the Specifications have been met and that the manufacturer will be responsible for any future costs incurred to bring their equipment into compliance for all items not meeting Specifications and not listed in the Non-Compliance Section.

Manufacturer: _____

Signature: _____

Contact Name: **Date:** ____/____/____

Contractor: _____

Signature: _____

END OF SECTION

SECTION 31 10 00 - SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Clearing, grubbing, and topsoil stripping.
 - 2. Removing above-grade Site improvements.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.

1.2 DEFINITIONS

- A. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 1-inch in diameter; and free of weeds, roots, and other deleterious materials.

1.3 MATERIALS OWNERSHIP

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

1.4 SUBMITTALS

- A. Record Drawings According to General Conditions: Identify and accurately locate capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.5 PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- B. Salvable Improvements: Carefully remove items indicated to salvage and store on Owner's premises where indicated.
- C. Notify utility locator service to locate and mark utilities in Project area before site clearing.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Provide erosion-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- C. Protect existing site improvements to remain from damage during construction. Restore damaged improvements to original condition, as acceptable to Owner.
- D. Verify existing plant life or items designated to remain are tagged or identified.

3.2 UTILITIES

- A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions, then only after arranging to provide temporary utility services according to requirements indicated:
 - 1. Notify Architect not less than 2 days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Architect's written permission.
- B. Coordinate removal of underground utilities with other Sections of Contract Documents.

3.3 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction. Removal includes digging out stumps and obstructions and grubbing roots.
 - 1. Do not remove trees, shrubs, and other vegetation indicated to remain or relocated.
 - 2. Cut minor roots and branches of trees indicated to remain, clean and carefully, where such roots and branches obstruct installation of new construction.
 - 3. Completely remove stumps, roots, obstructions, and debris extending to 18 inches below exposed subgrade.
 - 4. Use only hand methods for grubbing within drip line of remaining trees.
- B. Fill clearing and grubbing depressions with satisfactory soil material, unless further excavation or earthwork indicated. Place fill material in horizontal layers not exceeding 8-inch loose depth. Compact each layer to density equal to adjacent original ground.

3.4 TOPSOIL STRIPPING

- A. Remove sod and grass before stripping topsoil.
- B. Strip topsoil to depths encountered to prevent intermingling with underlying subsoil or other waste materials. Strip surface soil of unsuitable topsoil including trash, debris, weeds, roots, and other waste materials.
- C. Stockpile topsoil materials away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 1. Limit height of topsoil stockpiles to 72 inches.
 - 2. Do not stockpile topsoil within drip line of remaining trees.
 - 3. Stockpile surplus topsoil and allow for respreading deeper topsoil.

3.5 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.
- B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut length of existing pavement to remain before removing existing pavement. Saw-cut faces vertically.

3.6 DISPOSAL

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

END OF SECTION

SECTION 31 23 00 - EXCAVATION AND FILL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes all excavation, filling, and grading in connection with paved streets and parking lots and unpaved landscaped areas. Excavation, filling, and grading shall conform to lines and grades as shown on Plans. Contractor furnishes all materials, equipment, tools, labor, superintendence, and incidentals necessary to complete Work per Drawings and as specified herein.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.

1.2 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
 - 1. Initial Backfill is placed beside and over pipe in a trench, including haunches to support sides of pipe.
 - 2. Final Backfill is placed over initial backfill to fill a trench.
- B. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- C. Excavation: Removal of material encountered above subgrade elevations to lines and dimensions indicated.
 - 1. Authorized Additional Excavation is below subgrade elevations or beyond indicated lines and dimensions as Architect directs. Authorized additional excavation and replacement material paid per Contract provisions for changes in Work.
 - 2. Bulk excavation is more than 10 feet in width and 30 feet in length.
 - 3. Unauthorized excavation is below subgrade elevations or beyond indicated lines and dimensions without Architect direction. Unauthorized excavation and remedial Work directed by Architect, shall be without additional compensation.
- D. Embankment/Fill: Soil materials used to raise existing grades.
- E. Rock: Material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material 3/4-cubic yard or more in volume that exceed a standard penetration resistance of 100 blows per 2 inches when tested by a geotechnical testing agency, per ASTM D1586.
- F. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other manmade stationary features constructed above or below ground surface.
- G. Subgrade: Uppermost surface of excavation or top surface of a fill/backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.

1.3 PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earthmoving operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Do not commence earthmoving operations until temporary sedimentation- and erosion-control measures are in place.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. Provide borrow soil materials when sufficient satisfactory soil materials unavailable from excavations.
- B. Satisfactory Soils: Onsite material free of gravel, debris, waste, frozen materials, vegetation, and other deleterious matter or a select non-expansive material mechanically processed to produce a consistent uniform material meeting the following general requirements:
 - 1. Maximum Aggregate Size: 3.0 inches.
 - 2. Percent Retained on No. 4 Sieve: 25 to 50 percent.
 - 3. Percent Retained on No. 40 Sieve: 50 to 85 percent.
 - 4. Plasticity Index: 15 maximum.
- C. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content.
- D. Bedding Course: Naturally- or artificially-graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.
- E. Sand: ASTM C33; fine aggregate.

PART 3 - EXECUTION

3.1 STORAGE OF SOIL MATERIALS

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

3.2 EXCAVATION

- A. Excavation consists of removing all material from areas where subgrade or finished grade is below existing ground. Excess excavated material not required, or otherwise unsuitable according to geotechnical report, for making necessary fills for items in Project, shall be disposed by Contractor, as Architect directs, in approved waste areas. No additional compensation made for hauling or disposing waste material or excess excavation.
- B. Existing Pavement, Curbs, Gutters, Sidewalks, Etc.: All existing pavement, concrete curbs, trees, grass, or other organic materials removed as excavation, shall be classified as waste material, and not incorporated in fills unless Architect gives specific direction to do so. Where sidewalks are removed, take care to avoid damage to that portion of walk not requiring removal. Waste material shall be disposed as provided herein.
- C. Finishing: All excavation shall be to lines and grades shown on Plans. Any excavation below such grade, and consequential filling to established grade, shall be at Contractor expense. Neatly finish excavation beyond ends of intersection stubs, between curb and property line, or other transition areas, to lines and grades shown on Plans or established by Architect.
- D. Damage to Existing Pavement, Curbs, Utilities, Etc.: Take care in all excavation work to avoid damage to existing pavement, curbs, utilities, and other such installations. If these installations are damaged by Contractor forces or equipment, replace or repair as directed at expense of Contractor.
- E. Unclassified Excavation: All material excavated as part of Project.

3.3 EMBANKMENT/TOPSOIL

- A. Embankment: Constructed to lines and grades shown on Plans or directed by Architect, in approximate horizontal layers. Only place suitable material, approved by Architect, as embankment. Contractor shall obtain borrow source if necessary to complete embankment areas. Material shall meet ASTM D2487 soil classification groups SP and SM, free of rock or gravel larger than 1-inch in any dimension, debris, waste, or vegetation. Material shall have a PI less than 15. Existing surface where placing fill shall be scarified to approximately 3 inches before placing any fill material, to bond fill to existing surface. Remove and replace any unsuitable subgrade materials below finished subgrade excavation with suitable materials. No separate payment for removing and replacing such materials made and shall be incidental to subgrade preparation.
- B. Topsoil:
 - 1. All topsoil imported for planting beds shall be typical in texture of soils in Project area. Soil shall be free of nutgrass and other noxious weeds, grasses, sticks, roots, sterilants, chemicals or stones, consistent in texture characteristic of red sandy loam. Blow sand or caliche not permitted. No rocks larger than 2 inches in diameter permitted. Topsoil, source, and method of installation shall be approved by Architect.
 - 2. Minimum 12-inch depth required at all landscape areas.
 - 3. Minimum 4-inch depth required at all other areas shown on Plans.
- C. Quality Control: One field density test required for each 500 square yards of prepared subgrade.

3.4 SOIL MOISTURE CONTROL

- A. Uniformly moisten and mechanically process soil to produce material with consistent and uniform soil moisture content. Deviation in moisture content consistency is grounds for rejection of material.
 - 1. Do not place backfill or fill soil material on muddy, frozen, frosty, or icy surfaces.
 - 2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and too wet to compact to specified dry unit weight.

3.5 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
- C. Mechanically process soil material until a consistent material, uniform in color, unit weight, and moisture content is produced prior to any compaction efforts.
- D. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D698:
 - 1. Proctor samples will not be taken for performance testing before material processed to a uniform and consistent material on site. Approval of any material in submittal process does not guarantee acceptance of material in the field.
 - 2. For Pavements: Scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
 - 3. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 95 percent.
 - 4. Under turf or unpaved areas, scarify and recompact top 12 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.
 - 5. For utility trenches, compact each layer of initial and final backfill soil material at 95 percent.
 - 6. At Architect discretion, additional proctors and rework required where compaction exceeds 103 percent of ASTM D698. Compaction result of 103 percent ASTM D698 or higher is cause for rejection.

3.6 SUBGRADE FINISHING

- A. Finish subgrade accurately to lines, grades, and cross-sections shown on Plans or established in the field. Bring subgrade in cut areas to grade by blading or hand grading. Compact surface with approved pneumatic roller followed by approved 3-wheel roller until it presents a uniform compacted appearance. Compact subgrade in fill areas with approved pneumatic roller. Follow final rolling of last layer deposited by blading and rolling with 3-wheel roller as described.
- B. Accurately form warped sections, valley gutters, and other irregularities in section shown on Plans or established in the field, in subgrade during finishing operation. Check subgrade by "teeing" from gutter to gutter on cross-section, valley gutters, with straightedge, longitudinally. Contractor shall furnish a satisfactory straightedge if required. Correct variations more than 1/2-inch from true grade or true cross-sections by loosening, adding, or removing material, reshaping, and recompacting affected area. Set "blue tops" set to finished subgrade elevations set where elevations cannot be checked as stated.

3.7 ROLLING EQUIPMENT

- A. Pneumatic Rollers: Consists of not less than 9 pneumatic-tired wheels, running on 2 axles so rear group of tires will not follow in tracks of forward group, mounted in rigid frame, and provided with loading platform or body suitable for ballast loading. Front axle shall rotate around a king pin located so roller may turn within a minimum circle. Roller, under working conditions, shall have an approximate 60-inch effective rolling width and give a minimum compression of 325 pounds per inch of width of tire tread. Roller shall be drawn by a suitable pneumatic-tired tractor or self-propelled type.
- B. Three-Wheel Roller: Shall be a three-wheel self-propelled type, weighing not less than 10 tons, and provide a compression on rear wheels not less than 325 pounds per linear inch of width. Rear wheels shall be flat, diameter not less than 48 inches, and width not less than 20 inches.

3.8 PROTECTION

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

3.9 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of off Owner's property.

END OF SECTION

SECTION 31 23 00.10 - EXCAVATION AND FILL FOR UTILITIES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes all excavating, backfilling, and compacting of trenches for pipe and pipe accessories and other utilities. No separate pay item for excavating, backfilling, and compacting trenches. Correct overexcavation not at Architect direction at Contractor expense. OSHA regulations and Part 3 herein will apply to all excavation and trenching.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.

PART 2 - PRODUCTS

2.1 TRENCHES

- A. Excavate pipe trenches to lines and grades shown on Drawings or established by Architect. Before excavation begins in paved areas, cut, or saw existing pavement to a neat line by methods meeting Architect approval. Maximum width of trench from pipe invert to top of trench shall be as detailed on limits of excavation; indicated on Contract Drawings. Procedures for treatment of trench walls shall be as prescribed by trench safety system. In some areas of limited right-of-way or when necessary to protect existing facilities, limit slope of trench wall. Where necessary to stay within maximum width limits at top of pipe, adequately brace and sheet trench. Contractor shall be fully responsible for any damage to adjacent structures due to inadequate trench wall supporting devices.
- B. Where special pipe bedding material not required, excavate trench to an even grade so bottom of pipe will rest on bottom of trench throughout entire length of pipe. In obtaining a true and even grade, wet excavated trench bottom as necessary to facilitate compaction. Compact bottom of trench by mechanical means to consolidate all loose material disturbed during excavation. No compaction tests required on bottom of trench; however, compact entire width and length of trench so no loose material remains. Correct any part of trench excavated below grade by filling with approved materials and thoroughly compacting. If clay, rock, or other unyielding material encountered in trench bottom, remove to 6 inches below grade, refill with selected materials, and compact to minimum 95 percent maximum density and plus or minus 2 percent optimum moisture per ASTM D698 to specified grade.
- C. Dig bell holes of ample dimensions at each joint to permit jointing pipe made properly, and prevent pipe from resting on or supported by bell.
- D. Use trench-digging machinery to make trench excavations except where operation of same would cause damage to existing structures above or below ground. In such instances, employ hand methods. Contractor shall locate all existing underground lines, whether shown on Drawings, sufficiently in advance of trenching operations to prevent any damage thereto. Take extreme care to prevent such damage and Contractor fully responsible for damage to any such lines. Pothole and locate all utility lines at least 1,000 feet ahead of pipeline placement operations to allow Architect a minimum 4 working days to initiate any necessary changes in alignment and/or grade of pipeline.

- E. No classification of excavated materials and excavate all materials encountered as required. Protect adjacent structures from damage by construction equipment. Excavated material may be stockpiled alongside trench per approved Trench Safety Plan, not endangering work. Within street rights-of-way, remove excavated material as necessary from the street to allow traffic to pass safely. In no case is excavated material allowed to be stockpiled in street or public rights-of-way.
- F. Excavate for manholes as required, providing space for constructing structure and trench safety system if applicable.
- G. Explosives not permitted.

PART 3 - EXECUTION

3.1 TRENCH EXCAVATION SAFETY SYSTEM

- A. This item covers requirements for Contractor to provide design and construction of trench safety system for all trenches excavated. Contractor required to install a trench system to provide for safe excavation of all trenches exceeding a depth of 5 feet per OSHA standards. It is the duty and responsibility of Contractor and all subcontractors to be familiar and comply with all requirements of Public Law 91-596, 29 U.S.C. Specs. 651 et. Seq., Occupational Safety and Health Act of 1970 (OSHA), all amendments thereto, and enforce and comply with all provisions of this act. In addition, on projects where trench excavation exceeds 5 feet, Contractor and all subcontractors shall comply with all requirements of 29 C.F.R. secs., and 1926.652 and 1926.653, OSHA Safety and Health Standards, more fully described herein.
- B. Description:
 - 1. This Section governs trench safety systems required for construction of all trench excavation utilized in Project, including all additional excavation and backfill necessitated by the safety system. Trench safety systems shall be suitable for construction of pipelines, utilities, etc., installed below grade and sufficient to fully protect public or private property including other existing utilities and structures below or above grade. Trench safety systems include but are not limited to sloping of side of excavation, sheeting, trench boxes or trench shields, sheet piling, cribbing, bracing, shoring, dewatering, or diversion of water to provide adequate drainage.
 - 2. Contractor is responsible for design of systems and procedures (use of sheet piling, shoring, or other means of temporary support to protect existing buildings, streets, highways, water conveying structures, and any other structures). For existing utilities, Contractor may elect, at his cost, to remove utilities under stipulated condition that removal and subsequent replacement of utilities shall meet with approval of Architect, Owner, utility owner, and all agencies having jurisdiction of structure or property. In all cases, Contractor is fully responsible for protection of public or private property and any person(s), who, as a result of Contractor Work, may be injured.
 - 3. Successful responsible Bidder is required to submit 3 sets of trench excavation plans with a trench safety system to Owner for review within 15 consecutive days after Award of Contract.
 - 4. Plans must be designed and sealed by a Professional Engineer registered in Texas with professional experience in geotechnical engineering. Contractor is responsible for obtaining borings and soil analysis as required for design and preparation of trench excavation plan and trench safety system. Design trench excavation plan and trench safety system per OSHA standards and regulations.

5. No trenching in excess of 5 feet below existing grade allowed until trench excavation plan is reviewed and returned to Contractor. Any changes in trench excavation plan after initiation of construction will not cause an Extension of Time or Change Order but such changes will require same review process as original excavation plan.
 6. Contractor accepts sole responsibility for compliance with all applicable safety requirements. Review is only for general conformance with OSHA safety standards; and trench excavation plan review does not relieve Contractor of any/all construction means, methods, technique, and procedures. Any property damage or bodily injury, including death arising from use of trench excavation plan, shall remain sole responsibility and liability of Contractor.
- C. Construction Methods: Accomplish trench safety systems per detailed specifications set out in provisions of Excavations, Trenching, and Shoring, Federal Occupational Safety and Health Administration (OSHA) Standards, 29 CFR, Part 1926, Subpart P, as amended including proposed Rules published in Federal Register (Vol. 54, No. 209) on Tuesday, October 31, 1989, or subsequent revisions. Sections incorporated into these Specifications by reference include Sections 1926-650 through 1926-653. Legislation enacted by Texas Legislature (H.B. NoS. 662 and 665) with regard to Trench Safety Systems is hereby also incorporated, by reference, into these Specifications.
- D. Safety Program:
1. Contractor shall submit a safety program specifically for construction of trench excavations together with trench excavation plans for trench safety systems. Trench safety program shall be per OSHA Standards governing presence and activities of individuals working in and around trench excavation.
 2. Contractors have 3 generally accepted methods, or combinations thereof, to meet OSHA Standards for trench excavation:
 - a. Utilization of Trench Box: Utilizing a trench box must submit physical dimensions, materials, position in trench, expected loads, and strength of box. Trench box shall be designed by a Professional Engineer.
 - b. Shoring, Sheeting, and Bracing Methods: Utilizing shoring, sheeting, and bracing must submit dimensions and materials of all uprights, stringers, cross-bracing, and spacing required to meet OSHA requirements, all designed by a Professional Engineer.
 - c. Sloping and Benching: Utilizing sloping and benching methods shall have methods designed by a Professional Engineer.
 3. Safety program must indicate in which areas Plan will be utilized.
 4. No claims for delay permitted for Contractor delay in obtaining safety program approval.

- E. Inspection:
 - 1. Provide a qualified person to daily inspect trench safety systems to ensure systems meet OSHA requirements. Contractor shall provide this person's name as part of post-bid, pre-award key personnel qualifications submittal. Maintain a permanent record of daily inspections.
 - 2. If evidence of possible cave-ins or slides is apparent, cease all Work in trench until Contractor takes necessary precautions to safeguard personnel entering trench. It is sole duty, responsibility, and prerogative of Contractor, not Owner or designated representative, to determine specific applicability of designed trench safety systems to each field condition encountered on Project.
- F. Indemnification:
 - 1. Indemnify and hold harmless Owner, employees, and agents, from any/all damages, costs (including without limitation legal fees, court costs, and cost of investigation), judgments or claims, by anyone, including workers or general public, for injury or death of person(s) resulting from collapse/failure of trenches constructed under this Contract.
 - 2. Acknowledge and agree this indemnity provision provides indemnity for Owner in case claims are made Owner is negligent by act/omission in providing for trench safety, including but not limited to inspections, failure to issue stop-work orders, and hiring Contractor.
- G. Emergencies: In any emergency situation which may threaten or affect safety or welfare of persons or property, act at your discretion to prevent possible damage, injury, or loss. Any additional compensation or extension of time claimed for such action is considered in view of cause of emergency and per general conditions.

3.2 OPEN TRENCH RESTRICTION

- A. Limit stringing out pipeline ahead of trenching operations in street right-of-way, to linear footage of pipeline installed in 1-day's Work. Under no circumstances is pipeline allowed to string out or store in street rights-of-way any longer than 1-day. Except where otherwise specified, indicated on Plans or accepted in writing by Architect, maximum length of open trench, where construction is in any stage of completion shall not exceed lengths set forth. Open trench includes excavation, pipe laying, backfilling, and pavement replacement. Descriptions under area designations are general in nature and may be amended in writing by Architect due to particular or peculiar field conditions.
 - 1. Business District Areas: 300 linear feet.
 - 2. Residential Areas: One block or 300 linear feet, whichever is less.
 - 3. Undeveloped Areas: 1,000 linear feet (open trench shall not exceed length of 1-day's pipe laying).
- B. Complete backfill of all trenches before removing dewatering operations from area to prevent possibility of pipe flotation.
- C. Excavated areas considered open trench until all pavement replacements made or all trenches outside of pavement replacement areas are backfilled, compacted, and replaced to original condition per Contract Documents. Completely backfill trenches across streets and place temporary or permanent pavement within 48 hours after laying pipe.

- D. Provide substantial steel plates, properly secured in place, with adequate trench bracing used to bridge across trenches at street and alley crossings and at commercial and residential driveways, where trench backfill and temporary patches are not completed before end of Contractor regular working hours. Provide safe and convenient passage for pedestrians at all times. Architect may designate an enclosed or railed passage for safe access of pedestrian traffic at any location adjacent to construction activities as necessary. Maintain access to fire stations, fire hydrants, schools, hospitals, EMS, emergency response, homes, and businesses at all times.

3.3 BEDDING

- A. Bedding and bedding zone for pipe shall be as specified.

3.4 BACKFILLING

- A. Backfill all trenches per this Section as soon as practicable after pipe is installed with specified bedding condition. As soon as practicable after laying and jointing pipe, completion of bedding, and completion of structures, backfill trench.
- B. Backfill material immediately adjacent to pipe or bedding material shall meet gradation requirements recommended by geotechnical engineer. Material shall be free from rocks, boulders, clay or other unsuitable material(s).
- C. Placement of Backfill: If bedding requirements do not require bedding zone material to top or above pipe, carefully place first lift of backfill material under and around pipe and thoroughly compact by mechanical tamps to spring line of pipe. When first lift is compacted by mechanical tamps, second lift shall be to 1-foot above top of pipe and compacted as specified. Placing each lift will be dependent upon pipe diameter and in no case shall each lift exceed 8 inches in thickness based upon loose measure. Backfilling remainder of trench shall be done in the following manner:
 - 1. Place backfill material in trench in layers not to exceed 8 inches. Backfill material shall be moistened as necessary to obtain optimum moisture and mechanically processed to a consistent material, uniform in color, moisture, and unit weight prior to placement and compaction efforts in the trench. Compact with approved mechanical compaction equipment until required density obtained. Do not use vibratory rollers in city streets. Depending upon mechanical compaction equipment used, Architect may allow Contractor to lay thicker lifts. If Contractor feels he can achieve passing density tests based upon density requirements of Contract with thicker lifts than 8 inches by loose measure, he shall first submit proposed method of compaction, type of equipment to use, and desired lift thickness. Architect shall determine whether Contractor's proposed methods are acceptable. In utilizing existing spoil for backfill material, any spoil that contains obvious and excessive amounts of clay and/or large cobbles (greater than 3 inches) shall not be acceptable for use in any zone. Architect shall determine whether excavated spoil is acceptable for backfill material.

2. Density requirements shall be as:
 - a. For all backfill in areas to pave, obtain a density not less than 95 percent per ASTM D698 from top of subgrade to 18 inches below top of subgrade. Obtain a density 90 percent per ASTM D698 from 18 inches below top of subgrade to top of pipe bedding zone.
 - b. For all backfill not in paved areas, obtain a density not less than 90 percent per ASTM D698 from top of pipe bedding zone to ground surface.
 - c. Jetting or water ponding methods not allowed.
 - d. Slamming excavator bucket down on backfill is unacceptable for compaction. Contractor shall use sheepsfoot wheel rollers or other approved mechanical compaction techniques.
 - e. At Architect discretion, additional proctors and rework is required where compaction exceeds 103 percent of ASTM D698. Compaction result of 103 percent ASTM D698 or higher is cause for rejection.
- D. Field Quality Control:
 1. Take field densities of backfill every 300 linear feet of pipe installation, per ASTM D698 at the following depths:
 - a. One-third pipe height.
 - b. Springline.
 - c. Top of pipe.
 - d. Every lift thereafter to ground surface.
 2. Additionally, obtain 1 moisture density curve for each type of material used per ASTM D698, 1 sieve analysis, and 1 Plasticity Index for each type of imported material used per ASTM C136 and D4318.
 3. Sloping the backfill with an excavator to test multiple lifts is not permitted. Each lift shall pass moisture and density requirements prior to placement of subsequent lifts.
- E. Backfill and Maintenance:
 1. Following backfill completion, maintain trench surface in a satisfactory manner until final completion and acceptance of finished Project. Maintenance shall include blading as necessary, filling depressions caused by settlement, and other Work required to keep areas and roads in satisfactory condition.
 2. Repair any settlement which occurs before and during the 1-year warranty period at Contractor expense.

END OF SECTION

SECTION 32 11 50 - FLEXIBLE BASE COURSE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes excavating, crushing, hauling, and spreading base material and wetting, compacting, and shaping it to form a flexible base course for paving, to lines, grades, and typical cross section shown on Plans, and as specified herein. Furnish all materials, equipment, tools, labor, superintendence, and incidentals necessary to complete Work.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.
 - 2. Section 31 23 00 "Excavation and Fill."

1.2 QUALITY CONTROL

- A. This list is a guideline for number of tests required per sequence of construction. Architect shall direct required tests and reserves the right to adjust, modify, or waive required test.
 - 1. Base Material: Retest gradation, liquid limits and plasticity index, for each 10,000 square yards of base material laid.
 - 2. Compaction Test: One field density test required for each 500 square yards of caliche base material laid.

1.3 SUBMITTALS

- A. Submit product data representative of product per Submittal Procedures and sample must be less than 12 months old.
- B. Product Data: Must submit product data for each source.
- C. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of these with requirements indicated, based on comprehensive testing:
 - 1. Atterburg limits.
 - 2. Sieve analysis.
 - 3. Proctor.
 - 4. Wet ball mill.

PART 2 - PRODUCTS

2.1 CALICHE BASE

- A. Furnish materials for constructing base course from Architect-approved source. Locate source of caliche, securing approval of source, and arrange with property Owner on which pit is located, for use of material. Strip pits of all unacceptable material and dispose stripping as agreeable to pit property Owner. Open pits to immediately expose vertical faces of all various strata of acceptable material. Unless otherwise directed, secure material in successive vertical cuts extending through all exposed strata. Any incidental costs, including securing, stripping, or crushing base material, is paid by Contractor.

- B. Screen all acceptable material, crush, and return oversized material to screened material so a uniform material is produced. Processed caliche base material, when properly slaked and tested by TxDOT standard laboratory methods, shall meet the following requirements:

Property	Test Method	Grade 1-2	Grade 3	Grade 5
Sampling	Tex-400-A			
Master gradation sieve size (cumulative % retained)	Tex-110-E			
2-1/2"		0	0	0
1-3/4"		0-10	0-10	0-5
7/8"		10-35	-	10-35
3/8"		30-65	-	35-65
#4		45-75	45-75	45-75
#40		65-90	50-85	70-90
Liquid Limit, % Max	Tex-104-E	40	40	35
Plasticity Index, Max ¹	Tex-106-E	10	12	10
Plasticity index, Min ¹		As shown on the plans	As shown on the plans	As shown on the plans
Wet ball mill, % Max	Tex-116-E	40		40
Wet ball mill, % Max increase passing the #40 sieve		20		20

- C. Crushed or recycled concrete must meet TxDOT 247 Type D Recycled Materials. Tests necessary to show compliance will be required in a Submittal.
- D. Recycled material (Recycled Asphalt Pavement (RAP), etc.) not permitted unless specifically shown otherwise on Plans.

PART 3 - EXECUTION

3.1 HAULING AND PLACING

- A. Before placing any base material, shape, wet, roll, and compact subgrade to cross-sections and grades specified per Section 31 23 00 "Excavation and Fill."
- B. Place flexible base in uniform courses with compacted thicknesses no more than 8 or less than 3 inches compacted if compaction achieved. Deliver material in approved vehicles of uniform capacity and supply amount of material required to construct base course to thickness shown on Plans. Spread and shape to thoroughly mix material and prevent segregation. Sprinkling during this process required if necessary to prevent segregation. When shaping is completed, material shall be uniformly well graded and of proper thickness. Spread and shape material deposited upon subgrade the same day. In event inclement weather or other unforeseen circumstances renders impractical spreading of material during the day it is deposited, material shall be scarified, mixed and spread as directed by Architect. Correct and remove or replace all areas and nests of segregated coarse or fine materials with well-graded material. If additional or corrective binder required, it shall be furnished and applied in amount directed by Architect. Carefully and evenly incorporate such binder material with material in place by scarifying, harrowing, or other approved method.

3.2 COMPACTING AND FINISHING

- A. After material is properly spread, sprinkle, roll, and blade until thoroughly compacted. During compaction, apply water to maintain optimum moisture in material and sufficiently blade base course to ensure a uniform distribution of base materials and smooth uniform surface, true to section and grades established, after final compaction. Compact by rolling with pneumatic and steel-wheeled rollers as approved by Architect. In areas not accessible to roller, compact base material with mechanical tampers or other approved methods to secure uniform compaction over entire paved area. Throughout entire operation, maintain shape of base course by blading. Blading and rolling shall continue until course is thoroughly compacted and surface is smooth and in conformity with typical sections shown on Plans, to lines and grades established. Compact material to 95 percent maximum density, at optimum moisture, as determined by ASTM D1557. At Architect discretion, additional proctors and rework shall be required where compaction exceeds 103 percent of ASTM D1557. A compaction result of 103 percent ASTM D1557 or higher is cause for rejection.
- B. Immediately correct all irregularities, depressions, or weak spots which develop during compaction by scarifying areas affected, adding or removing material as required, reshaping, and recompacting by sprinkling and rolling. Immediately before placing surfacing, check base for grade and cross section, and correct any deviation in excess of 1/4-inch from grade or true cross section. Set blue tops to finished base elevations to check base for proper grade and elevation.
- C. If base course is opened to traffic before surfacing, satisfactorily maintain base by wetting, blading, and rolling until wearing surface is placed thereon.

END OF SECTION

SECTION 32 13 13 - CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Where Contractor elects to remove, or required to remove, and replace concrete pavement and driveway as part of construction.
 - 2. Section applies also for repair or replacement of facilities otherwise damaged by Contractor operations, including:
 - a. Concrete driveways.
 - b. Concrete curb and gutter.
 - c. Sidewalks, flatwork, and other miscellaneous concrete.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.
 - 2. Section 31 23 00 "Excavation and Fill."
 - 3. Section 32 11 50 "Flexible Base Course."
 - 4. Section 32 13 73 "Concrete Paving Joint Sealants."

1.2 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, expansive hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume.

1.3 SUBMITTALS

- A. Submit product data representative of product and less than 12 months old per Submittal Procedures.
- B. Product Data: For each type of manufactured material and product indicated.
- C. Design Mixes: For each concrete pavement mix. Include alternate mix designs when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
- D. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of these with requirements indicated, based on comprehensive testing current materials:
 - 1. Cementitious materials and aggregates.
 - 2. Steel reinforcement and reinforcement accessories.
 - 3. Fiber reinforcement.
 - 4. Admixtures.
 - 5. Curing compounds.
 - 6. Applied finish materials.
 - 7. Bonding agent or adhesive.
 - 8. Joint fillers.
- E. Shop Drawings for reinforcement detailing, fabricating, bending, and placing concrete reinforcement. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures," showing bar schedules, stirrup spacing, bent bar diagrams, materials, steel grades, and arrangement of concrete reinforcement and methods of support.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Experienced installer who completed pavement work similar in material, design, and extent to this Project and whose Work resulted in construction with a record of successful in-service performance.
- B. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C94 requirements for production facilities and equipment. Manufacturer must be certified per National Ready Mix Concrete Association's Plant Certification Program.
- C. Testing Agency Qualifications: Independent testing agency, acceptable to authorities having jurisdiction.
- D. Source Limitations: Obtain each type or class of cementitious material of same brand from same manufacturer's plant and each aggregate from one source.
- E. ACI Publications: Comply with ACI 301 "Specification for Structural Concrete," unless modified by requirements of Contract Documents.
- F. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixes.

1.5 PROJECT CONDITIONS

- A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities and emergency services.

PART 2 - PRODUCTS

2.1 FORMS

- A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.
- B. Use flexible or curved forms for curves of a radius 100 feet or less.
- C. Forms should be no less than 10 feet in length.
- D. Form-Release Agent: Commercially-formulated form-release agent with maximum 350 grams per liter volatile organic compounds (VOCs) that will not bond with, stain, or adversely affect concrete surfaces nor impair subsequent treatments of concrete surfaces.
- E. Form Ties: Factory-fabricated, adjustable-length, removable or snap-off metal form ties designed to prevent form deflection and spalling of concrete upon removal. Provide units leaving no metal closer than 1.5 inches to plane of exposed concrete surface. Provide ties so, when removed, leaves holes not larger than 1-inch in diameter in concrete surface.

2.2 STEEL REINFORCEMENT

- A. Plain-Steel Welded Wire Fabric: ASTM A185, fabricated from as-drawn steel wire into flat sheets, shall be 6 by 6 inches, 10-gauge welded-wire fabric, or as shown on Plans.
- B. Reinforcement Bars: ASTM A615, Grade 60, deformed.
- C. Joint Dowel Bars: Plain steel bars, ASTM A615, Grade 60. Cut bars true to length with ends square and free of burrs.
- D. Tie Bars: ASTM A615, Grade 60, deformed.
- E. Hook Bolts: ASTM A307, Grade A, internally and externally threaded. Design hook-bolt joint assembly to hold coupling against pavement form and in position during concreting operations and permit removal without damage to concrete or hook bolt.

- F. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcement bars, welded wire fabric, and dowels in place. Manufacture bar supports per CRSI "Manual of Standard Practice," from steel wire, plastic, precast concrete, or fiber-reinforced concrete of greater compressive strength than concrete, and:
 - 1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.
 - 2. Space reinforcing supports at 5-foot maximum in any direction.

2.3 FIBER REINFORCEMENT

- A. Fiber reinforcement may be used in place of wire mesh only if approved by Architect and Owner.
- B. Fiber reinforcement shall be 100-percent virgin polypropylene, collated, fibrillated fibers, made for use as concrete reinforcement, containing no reprocessed olefin materials, and conforming to ASTM C1116, Type III.
- C. Specific Gravity: 0.91.
- D. Tensile Strength: 70,000 to 100,000 psi.
- E. Length: 2 inches.

2.4 CONCRETE MATERIALS

- A. Use same brand and type of cementitious material from same manufacturer throughout Project.
- B. Portland Cement: ASTM C150, Types I, II, or III or ASTM G176 IA, IIA, or IIIA for air entrained.
- C. Aggregate: ASTM C33, uniformly graded, from a single source, as:
 - 1. Class: 4M.
 - 2. Maximum Aggregate Size: 1-1/2 inches nominal.
 - 3. Coarse aggregate for Class C or D concrete shall be crushed limestone.
 - 4. Aggregate shall be graded from fine to coarse and conform to ASTM C136. Gradation for aggregate shall meet these requirements by weight:

FINE AGGREGATE		COARSE AGGREGATE	
Sieve	Percent Retained	Sieve	Percent Retained
3/8-Inch	0	1-3/4-Inch	0
No. 4	0-5	1-1/2-Inch	0-5
No. 16	20-55	3/4-Inch	30-65
No. 30	45-75	3/8-Inch	70-90
No. 50	70-90	No. 4	95-100

- 5. Maximum amounts of organic impurities shall conform to ASTM C40 and C87. Maximum amounts of impurities finer than #200 sieve shall conform to ASTM C17. Maximum amounts of soft particles shall conform to ASTM C123. Maximum amounts of friable particles shall conform to ASTM C142.
- 6. Protect stockpiles from dusty conditions by drift fences or other methods approved by Architect. Stockpiling methods used shall not allow aggregate to roll down slope when adding to existing stockpiles. Built stockpiles in layers of uniform thickness. Equipment not permitted to operate over same lift repeatedly.
- 7. Coarse aggregate shall have maximum 18-percent loss when subjected to 5 cycles of magnesium sulfate soundness test (ASTM C88).

8. Wear percentage shall be no more than 40 when tested per ASTM C131 or C535.
 9. Aggregates delivered to mixer shall consist of crushed stone, crushed gravel, or natural sand. Crushing shall result in a product with coarse aggregate having at least 95 percent by weight of particles with 1 or more fractured faces and 75 percent by weight of particles with 2 or more fractured faces. Aggregate shall be composed of sound, tough, durable particles and meet requirements for deleterious substances given in ASTM C33. Aggregate in any size group shall not contain more than 8 percent by weight of flat or elongated pieces (having a ratio between maximum and minimum dimensions of a circumscribing rectangular prism exceeding 5 to 1).
- D. Water: ASTM C94.

2.5 ADMIXTURES

- A. Use of any material added to concrete mix shall be approved by Owner's Representative.
- B. Admixtures certified by manufacturer to contain no more than 0.1 percent water-soluble chloride ions by mass of cement and compatible with other admixtures.
- C. Air-Entraining Admixture: ASTM C260. Certified by manufacturer compatible with other required admixtures.
- D. Water-Reducing Admixture: ASTM C494, Type A.
- E. High-Range, Water-Reducing Admixture: ASTM C494, Types F or G.
- F. Water-Reducing and Accelerating Admixture: ASTM C494, Type E.
- G. Water-Reducing and Retarding Admixture: ASTM C494, Type D.

2.6 COVER MATERIAL FOR CURING

- A. Curing materials shall conform to one of these specifications:
 1. Liquid membrane-forming compounds for curing concrete shall conform to ASTM C309 requirements, Type 2 (all resin base).
 2. White polyethylene film for curing concrete shall conform to ASTM C171 requirements.
 3. White burlap-polyethylene sheeting for curing concrete shall conform to ASTM C71 requirements.
 4. Waterproof paper for curing concrete shall conform to ASTM C171 requirements.

2.7 RELATED MATERIALS

- A. Expansion/Isolation-Joint-Filler Strips: ASTM D1751, asphalt-saturated cellulosic fiber.
- B. Texture Surface for Ramps:
 1. Meet requirements of Texas Accessibility Standards.
 2. Color as selected by Owner.
 3. Surface should be non-skid.
 4. Durabak with Safti-Traxx Detachable Warning System by Cote-L Distribution Company or approved equal.
- C. Bonding Agent: Polyvinyl acetate or acrylic base.
- D. Sand Cushion: Clean, manufactured, or natural sand with plasticity index of 8 or less.
- E. Epoxy Adhesive: ASTM C 881, 2-component material suitable for use on dry or damp surfaces. Provide material type, grade, and class to suit Project requirements.

2.8 CONCRETE MIXES

- A. Prepare design mixes, proportioned per ACI 301, for each type and strength of normal-weight concrete determined by either laboratory trial mixes or field experience.
- B. Use a qualified independent testing agency for preparing and reporting proposed mix designs for trial batch method. Do not use Owner's field quality-control testing agency as independent testing agency.
- C. Proportion mixes to provide concrete with 0.45 maximum water-cementitious material ratio.
- D. Concrete Classification:
 - 1. Class A - Curb and gutter, sidewalks, curb ramps, medians, and miscellaneous slabs.
 - 2. Class C - Concrete pavement, fillets, and driveways.
- E. Mix Design:
 - 1. At least 15 days prior to beginning any concrete pavement construction, Contractor shall submit the following to Architect for approval:
 - a. Test certificates from approved commercial testing laboratory on all proposed aggregate. Certificates shall indicate material source, gradation, and loss from 5-cycle Magnesium Sulfate or Sodium Sulfate test (not to exceed 18 percent).
 - b. Mix design based on water-cement ratio.
 - c. Results of compression tests per ASTM C39 and/or flexural tests per ASTM C78, made by approved commercial testing laboratory. Tests shall be made on 6 cylinders/beams at curing times appropriate to concrete class.
 - 2. Architect will approve/reject mix design and materials based on submittals. This approval is subject to additional testing during construction.
 - 3. Mix designs for various classes of concrete shall conform to:

Class	Minimum Sacks	Maximum Gallon	Maximum Slump
	Cement per CY	Water per Sack	Inches
A	5.0	6.5	4 ±1
C	6.0	6.0	4 ±1

- F. Strength Requirements. Various classes of concrete shall conform to these strengths in psi as determined by average of 2 test cylinders or beams:

Class	COMPRESSIVE		FLEXURAL
	7 Day	28 Day	
A	2,100	3,000	-
C	2,800	4,000	600 (28-day)

- G. Properties:
 - 1. Air Entrainment: 5 percent, plus or minus 1-1/2 percent ASTM C260.
 - 2. When Approved by the Engineer, Synthetic Fiber: Use manufacturer's recommended rate, but not less than 1.0 pound per cubic yard (where applicable).

2.9 CONCRETE MIXING

- A. Ready-Mixed Concrete: Comply with requirements and with ASTM C94.
- B. Ready-Mixed Concrete: Comply with ASTM C94 and C1116 requirements when synthetic fibers are involved. When air temperature is 85 to 90 degrees F, reduce mixing and delivery time from 90 to 75 minutes. When air temperature is above 90 degrees F, reduce mixing and delivery time to 60 minutes.
- C. Project-Site Mixing: Comply with requirements and measure, batch, mix concrete materials, and concrete per ASTM C94. Mix concrete materials in appropriate drum-type batch machine mixer.
 - 1. For mixers of 1 cubic yard or smaller capacity, continue mixing at least 1.5 but not more than 5 minutes after ingredients are in mixer, before releasing any part of batch.
 - 2. For mixers of capacity larger than 1 cubic yard, increase mixing time by 15 seconds for each additional 1 cubic yard.
 - 3. Provide batch ticket for each batch discharged and used in Work, indicating Project identification name and number, date, mix type, mix time, quantity, and amount of water added.

2.10 CONCRETE BUMPERS (WHEELSTOPS)

- A. Cement: Portland Cement should contain minimum five sacks of cement per cubic yard ANSI/ASTM C150, Portland Type I - Normal, gray color.
- B. Concrete Materials: ANSI/ASTM C330; water and sand.
- C. Reinforcing Steel: ASTM A615, deformed steel bars.
- D. Air Entrainment Admixture: ANSI/ASTM C260.
- E. Concrete Mix: Minimum 4,500 psi, 28-day strength, air entrained 5 to 7 percent, with fibermesh.
- F. Use rigid molds, constructed to maintain precast units' uniform in shape, size and finish. Maintain consistent quality during manufacture.
- G. Embed two #5 reinforcing steel bars, and drill or sleeve for 2 dowels.
- H. Cure units to develop concrete quality and minimize appearance blemishes (non-uniformity, staining, surface crackling, etc.).
- I. Nominal Size: 6 inches high, 9 inches wide, 6 feet long.
- J. Profile: Rectangular cross section with sloped vertical faces, square ends.
- K. Anchoring Dowels: Cut reinforcing steel, 1/2-inch diameter, 12 inches long, pointed tip.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Proofroll prepared subgrade and base surface to check for unstable areas and verify need for additional compaction. Proceed with pavement only after nonconforming conditions are corrected and subgrade and base are ready to receive pavement.
- B. Remove loose material from compacted subbase surface just before placing concrete.
- C. Remove snow, ice, frost, and trash from subbase surface and reinforcement before placing concrete. Do not place concrete on frozen or muddy surfaces.

3.2 EDGE FORMS AND SCREED CONSTRUCTION

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

3.3 STEEL REINFORCEMENT

- A. Comply with CRSI "Manual of Standard Practice," for fabricating reinforcement and per CRSI "Placing Reinforcing Bars," for placing and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
- C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.
- D. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least 1 full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

3.4 JOINTS

- A. Construct isolation, contraction, construction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated. When joining existing pavement, place transverse joints to align with previously placed joints, unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of pavement and where pavement operations are stopped for more than 1/2-hour, unless pavement terminates at isolation joints.
 - 1. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of pavement strips, unless otherwise indicated.
 - 2. Provide tie bars at sides of pavement strips where indicated.
 - 3. Use a bonding agent where fresh concrete is placed against hardened or partially-hardened concrete surfaces.
- C. Isolation Joints: Form of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.
 - 1. Extend joint fillers full width and depth of joint.
 - 2. Terminate joint filler less than 1/2- or more than 1-inch below finished surface if joint sealant indicated.
 - 3. Place top of joint filler flush with finished concrete surface if joint sealant not indicated.
 - 4. Furnish joint fillers in 1-piece lengths. Where more than 1 length required, lace or clip joint-filler sections together.
 - 5. Protect top edge of joint filler during concrete placement with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete is placed on both sides of joint.
- D. Longitudinal joints shall be completed as soon as it will not cause excessive raveling of the concrete but no more than 24 hours after placement and before any traffic is allowed on the pavement. A crew should be available, day or night, to complete this Work according to ACI.

- E. Driveways and Pavements - Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with groover tool to radius noted on Plans. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces. Refer to Plans for joint dimensions.
- F. Sidewalks - Control Joints: Sawcut 1/8-inch control joints after curing to depth shown on Plans. Joints shall be clean, straight lines as shown on Plans. Clean concrete surface of all debris after installation.

3.5 CONCRETE PLACEMENT

- A. Inspection: Before placing concrete, inspect and complete formwork installation, reinforcement steel, and items to embed or cast in.
- B. Moisten subbase to provide a uniform dampened condition when placing concrete. Do not place concrete around manholes/other structures until at required finish elevation/alignment.
- C. Comply with ACI 304R requirements and recommendations for measuring, mixing, transporting, and placing concrete.
- D. Deposit and spread concrete in continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- E. Consolidate concrete by mechanical-vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures to consolidate concrete per ACI 309R recommendations.
 - 1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator, keeping it away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.
- F. Place concrete in 2 operations. Strike off initial pour for entire width of placement and to required depth below finish surface. Lay welded-wire fabric or fabricated bar mats immediately in final position. Place top layer of concrete, strike off, and screed. Remove and replace portions of bottom layer of concrete placed more than 15 minutes without covering by top layer or use bonding agent if approved by Architect.
- G. Screed pavement surfaces with a straightedge and strike off. Commence initial floating using bull floats or darbies to form an open textured and uniform surface plane before excess moisture or bleed water appears on surface. Do not further disturb concrete surfaces before finishing operations or spreading dry-shake surface treatments.
- H. When adjoining pavement lanes are placed in separate pours, do not operate equipment on concrete until pavement attains 85 percent of 28-day compressive strength.
- I. Cold-Weather Placement: Comply with ACI 306.1. Protect concrete Work from physical damage or reduced strength caused by frost, freezing actions, or low temperatures.
 - 1. When air temperature falls to, or is expected to fall, below 40 degrees F, uniformly heat water and aggregate before mixing to obtain a concrete mixture temperature not less than 50 nor more than 80 degrees F at point of placement.
 - 2. Do not use frozen materials or materials containing ice or snow.
 - 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs.

- J. Hot-Weather Placement: Place concrete per ACI 305R recommendations and as follows when hot-weather conditions exist:
 - 1. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 degrees F. Use chilled mixing water or chopped ice to control temperature if water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor option.
 - 2. Cover reinforcement steel with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
 - 3. Fog-spray forms, reinforcement steel, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.6 CONCRETE FINISHING

- A. Wetting concrete surfaces during screeding, initial floating, or finishing operations is prohibited.
- B. Float Finish: Begin second floating operation when bleed-water sheen disappears, and concrete surface stiffens sufficiently to permit operations. Float surface with power-driven floats or hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high and fill low spots. Refloat surface immediately to uniform granular texture.
 - 1. Light-to-Medium Broom Finish: Concrete sidewalks.
 - 2. Medium-to-Coarse-Textured Broom Finish: For concrete pavement and driveways, provide a medium-to-coarse finish by dragging float-finished concrete surface 1/16- to 1/8-inch deep with a stiff-bristled broom, perpendicular to line of traffic.
- C. Wall Finishes: Concrete walls shall be form-revealed finish. Reference Plans for forms dimension control.

3.7 CONCRETE PROTECTION AND CURING

- A. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and follow ACI 305R recommendations for hot-weather protection during curing.
- B. Evaporation Retarder: Apply to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2-pound per square foot by H before and during finishing operations. Apply per manufacturer-written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Begin curing after finishing concrete, but not before free water disappears from concrete surface.
- D. Curing Methods: Moisture curing, moisture-retaining-cover curing, curing compound, or a combination as follows:
 - 1. Moisture Curing: Keep surfaces continuously moist not less than 7 days with:
 - a. Water.
 - b. Continuous water-fog spray.
 - c. Absorptive cover, water saturated, kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
3. Curing Compound: Apply uniformly in continuous operation by power spray or roller per manufacturer-written instructions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.

3.8 FIELD QUALITY CONTROL

- A. Testing Agency: Contractor shall sample materials, perform tests, and submit test reports during concrete placement. Sampling and testing for quality control include those specified herein.
- B. Testing Services shall be performed per the following requirements:
 1. Sampling Fresh Concrete: Obtain representative samples of fresh concrete per ASTM C172, except modified for slump to comply with ASTM C94.
 2. Slump: ASTM C143; 1 test at point of placement for each compressive-strength test, but not less than 1 test for each day's pour of each type of concrete. Additional tests required when concrete consistency changes.
 3. Air Content: ASTM C231, pressure method; 1 test for each compressive-strength test, but not less than 1 test for each day's pour of each type of air-entrained concrete.
 4. Concrete Temperature: ASTM C1064; 1 test hourly when air temperature is 40 degrees F and below and 80 degrees F and above, and 1 test for each set of compressive-strength specimens.
 5. Compression Test Specimens: ASTM C31; 1 set of 4 standard cylinders for each compressive-strength test, unless otherwise indicated. Mold and store cylinders for laboratory-cured test specimens unless field-cured test specimens are required.
 6. Compressive-Strength Tests: ASTM C39; 1 set for each day's pour of each concrete class exceeding 5 but less than 25 cubic yards, plus 1 set for each additional 50 cubic yards. Test 1 specimen at 7 days and 2 at 28 days. Retain 1 specimen in reserve for later testing if required.
 7. When frequency of testing will provide fewer than 5 compressive-strength tests for a given class of concrete, test from at least 5 randomly selected batches or each batch if fewer than 5 are used.
- C. Report test results in writing to Architect and Contractor within 24 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing agency, concrete type and class, location of concrete batch in pavement, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
- D. Nondestructive Testing: Architect may permit impact hammer, sonoscope, or other nondestructive device but do not use as sole basis for approval or rejection.
- E. Additional Tests: Contractor shall make additional tests of concrete when test results indicate slump, air entrainment, concrete strengths, or other requirements not met, as directed by Architect. Contractor may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42, or by other methods as directed.

- F. Contractor shall pay for failing tests.
- G. Questionable Concrete:
 - 1. Concrete considered "questionable" where any of these test's evaluations occur:
 - a. Individual test strength is below specified strength.
 - b. Samples of concrete for acceptance test cylinders or acceptance test beams not representative of concrete-in-place in the pavement.
 - c. Insufficient or inadequate concrete curing.
 - d. Insufficient number of acceptance test cylinders or acceptance test beams for day's concreting were made for testing.
 - 2. Except where core tests will impair structure strength, make core test as directed by Owner at no cost to Owner to resolve questionable concrete. If core tests fail to demonstrate test strength required by Contract Documents or structural analysis does not confirm structure adequacy, Owner may, at his discretion, reject Work, require load tests, or additional construction. If structural analysis confirms pavement adequacy, Owner may, at his discretion, accept concrete with credit for full value of concrete delivered to site per general conditions.
 - 3. Contractor shall pay all costs incurred in providing additional testing or analysis to resolve acceptability of questionable concrete.
 - 4. Core Tests:
 - a. Take 3 representative cores from each member or area of concrete for each test considered questionable. Location of cores shall be as directed by Owner to least impair pavement strength. Replace damaged cores.
 - b. Obtain and test cores per ASTM C42 except if concrete in structure will be dry under service conditions, air dry cores (60 to 80 degrees F and relative humidity less than 60 percent) for 7 days before test and test dry. If concrete in structure will be more than superficially wet under service conditions, immerse cores in water at least 48 hours and test wet.
 - c. Questionable concrete considered structurally acceptable if core average is equal to or greater than 90 percent of specified strength and no single core is greater than 500 psi below specified compressive strength (50 psi below specified beam strength).

3.9 REPAIRS OF DEFECTIVE PAVEMENT SLABS

- A. Replace or repair broken slabs, random cracks, nonworking contraction joints near cracks, and spalls along joints and cracks as specified hereinafter at no cost to Owner.
- B. Broken Slabs: Entirely remove and replace pavement slabs containing multiple cracks through more than one-fourth of slab depth separating slab into 3 or more parts and pavement slabs with one or more cracks through more than one-fourth of pavement depth extending diagonally across more than one-third of slab either transversely or longitudinally. Repair pavement slabs containing a single diagonal crack intersecting transverse and longitudinal joints within one-third of width and length of slab from corner by removing and replacing smaller portion of slab. Repair broken slabs per Article 3.12 "Removal and Replacement of Defective Pavement Areas."

- C. Grooving and Repairing Cracks in Pavement Slabs: Random cracks penetrating more than one-fourth of pavement depth shall be grooved, crack filled with epoxy-resin, and groove filled with epoxy-resin grout. Groove top of crack to minimum 3/4-inch depth and not less than 3/8-inch nor more than 5/8-inch width by an approved grooving machine. Grooving machine shall be vertical rotary-cutting and able of following closely the path of crack and widening top of crack to required section without spalling or otherwise damaging concrete. Fill random cracks that are tight and penetrate less than one-fourth of pavement depth with epoxy-resin. When necessary, determine depth of crack penetration by inspection of cores not less than 4 inches in diameter drilled by Contractor at his expense where directed. Refill core holes with Portland cement concrete bonded to pavement with epoxy-resin grout. In addition, when a longitudinal crack is continuous across one or more slabs and penetrates more than one-fourth depth of pavement, drill core holes not less than 6 inches in diameter through full depth of slab at both ends of crack. In operation to drill cores at longitudinal-crack ends, position core bits so core removed will include no more than 3 inches of crack. Use sandblasting and high-pressure air jets to remove any fines near apparent ends of crack to permit accurate determination of crack ends. Remove all fines, dust, and other loose material on wall of cored holes by scrubbing with stiff-bristle brush, followed by washing and dewatering core hole. Refill core holes with epoxy-resin concrete. Apply a prime coat of epoxy-resin binder thinned with 3 parts toluene to 7 parts epoxy binder, by volume, and brush into vertical wall of core hole. Delay placement of epoxy-resin concrete until prime coat becomes stringy or approaches dry to touch. Place epoxy-resin concrete in layers not over 6 inches thick. Time interval between placement of additional layers shall be so temperature of epoxy-resin concrete does not exceed 140 degrees F any time during hardening.

3.10 NONWORKING (UNCRACKED) CONTRACTION JOINTS

- A. When transverse random crack terminates in or crosses a transverse contraction joint, fill uncracked portion of joint with epoxy-resin mortar or grout then route and seal crack. When a transverse random crack approximately parallels planned contraction joint and is within a distance of 25 percent of slab length from a contraction joint, route and seal crack then fill joint with epoxy-resin grout or mortar. When transverse random crack is more than 25 percent of slab length from nearest contraction joint, seal both joint and crack. Thoroughly clean joints to fill with epoxy-resin mortar or grout. Cleaning and sealing cracks and joints shall be as specified in Section 32 13 73 "Concrete Paving Joint Sealants."

3.11 SPALLING ALONG JOINTS AND CRACKS

- A. Repair spalls by making a saw cut at least 1-inch outside spalled area and to a 2-inch minimum depth. When spalled area abuts a joint, make saw cut to a 2-inch depth or one-sixth slab thickness, whichever is greater. Remove concrete between saw cut and joint or primary crack to a minimum 2-inch depth below original concrete surface, and to such additional depth necessary to expose a surface of sound, unweathered concrete uncontaminated by oils, grease, deicing salts or solutions, or other substances that inhibit performance of epoxy-resin bonding material. Remove concrete volume between saw cut and joint or primary crack using a hydraulic impact hammer, or other methods approved by Owner's Representative. Contractor shall exercise care in removing required concrete, so no damage is inflicted on adjoining concrete slab. Contractor shall repair damage of adjoining concrete at his expense to satisfaction of Owner's Representative.

- B. Thoroughly clean concrete void to patch with compressed air, sandblasting, or other approved methods to remove all loose material. Apply a prime coat of epoxy-resin binder thinned with three parts toluene to seven parts epoxy binder, by volume, to dry, cleaned surface of all sides of cavity, except joint or primary crack face. Apply prime coat in a thin coating and scrub into surface with a stiff-bristle brush. Delay placement of Portland-cement concrete, epoxy-resin concrete, or mortar until prime coat becomes stringy or approaches dry to touch. Place epoxy concrete in cavity in layers not exceeding 2 inches thick. Time interval between placements of additional layers shall be so temperature of epoxy-resin concrete does not exceed 140 degrees F at any time during hardening. Use mechanical plate, screed, float vibrators, or hand tampers to consolidate concrete or mortar. Remove excess mortar or concrete on adjacent surfaces of hardened concrete before it hardens. After finishing operations and while epoxy-resin concrete or mortar is still tacky, uniformly spread a thin coating of Portland cement on surface of repaired area and lightly brush into surface. If spalled area to patch abuts a working joint or a working crack which penetrates full depth of slab, use an insert or other bond-breaking medium to maintain working joints or cracks during repair Work. Use surface embedment of a flexible polyethylene or other suitable type hose for forming a groove along working crack to fill with appropriate type of joint-sealing material. Carefully remove hose before concrete hardens sufficiently to form a high bond. Thoroughly clean and fill groove with sealer as specified.

3.12 REMOVAL AND REPLACEMENT OF DEFECTIVE PAVEMENT AREAS

- A. Remove and replace defective pavement areas as specified herein with pavements of thickness and quality required by Specifications. Carefully remove defective pavement so adjacent pavement will not be damaged and existing reinforcement at joints left intact. When replacing a portion of unfractured slab, make a 2-inch-deep sawcut transversely across slab in required location, and remove concrete to provide an essentially vertical face in remaining portion of slab. Before placing fresh concrete, clean slab face of debris and loose concrete, then thoroughly coat with epoxy-resin grout. Epoxy-resin coating shall be approximately 1/16-inch and applied by scrubbing a thin coat of grout into surface with a stiff-bristle brush followed by a second application. Place strips of polyethylene sheeting on vertical faces of adjacent slabs at juncture with slab to patch as a bond-breaking medium. Place fresh Portland-cement concrete while epoxy-resin is still tacky, so grout coating is not removed. Construct longitudinal and transverse joints of replaced slab or portion thereof as indicated. Seal joints as specified in Section 32 13 73 "Concrete Paving Joint Sealants." Replaced pavements will be paid for at Contract price but no payment made for defective pavements removed nor for cost of removing defective pavements.

3.13 TOLERANCE IN SLAB THICKNESS

- A. Determine slab thickness by average caliper measurement of cores tested per ASTM C74. Owner's Representative may elect to measure thickness of concrete pavement before placement based on measurements from a string line stretched across forms or in plastic concrete behind concrete placing operation.
- B. Remove and replace areas found deficient in thickness with concrete of thickness shown on Plans at Contractor expense. If cores are used to determine concrete thickness, fill core holes with non-shrink grout by Contractor at his expense.

END OF SECTION

SECTION 32 13 65 - SURFACING FOR CONCRETE TENNIS AND PICKLEBALL COURT

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Surfacing for concrete tennis courts and pickleball courts.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.

1.2 SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include preparation requirements and application instructions.
- B. Samples: For each type of topcoat product.
- C. Samples for Initial Selection: For each type of topcoat product.
 - 1. Submit samples on rigid backing, 8 inches square.
 - 2. Apply coats on samples in steps to show each coat required for system.

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 degrees F.
 - 1. Maintain containers in clean condition, free of foreign materials and residue.
 - 2. Remove rags and waste from storage areas daily.

1.4 FIELD CONDITIONS

- A. Apply coatings only when temperature of surfaces to be coated and ambient air temperatures are between 50 and 95 degrees F, or as designated by manufacturer.
- B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures of less than 5 degrees F above the dew point; to damp or wet surfaces; or as designated by manufacturer.

1.5 LIMITS OF THE WORK

- A. Unless otherwise indicated on the Plans, the extent of tennis court and pickleball court surfacing (preparation and color finishing) is the entire surface of the court pavement(s) as measured from outside edge to outside edge.

1.6 PROTECTION OF EXISTING IMPROVEMENTS

- A. Contractor shall be responsible to protect existing improvements (such as buildings, lawn areas, landscape materials, curbing, parking lots, fences, net posts, wind screens, etc.) from damage, coloration, or applications of surfacing materials. Such areas shall be masked or otherwise protected. Any existing improvements that are damaged or detrimentally affected will be cleaned, repaired, or restored to their original condition by the Contractor at his expense.

1.7 STANDARDS AND WORKMANSHIP

- A. Tennis/Pickleball court color finishes and court preparation materials shall be applied by methods which are in general conformance with standards for pickleball court construction as prescribed by the U.S. Pickleball Association (USPA) and U. S. Tennis Association (USTA). However, in the event of conflict between this Specification and those of the USPA and USTA, this Specification shall apply. Any Work that does not conform to the specified requirements shall be removed or corrected by the Contractor at his expense without extension of time to complete Work, and it shall be remedied as directed by Architect or Owner.

1.8 WARRANTY

- A. Installer and manufacturer shall warrant Work for 2 years from date of Substantial Completion by Owner. This warranty shall be to the extent that court preparation materials, and surfacing treatments:
 - 1. Have been manufactured and applied by methods in accordance with these and the manufacturer's Specifications.
 - 2. Will hold fast, adhere and bond to the newly constructed courts and to the preparation materials.
 - 3. Have been applied in the quantities and thicknesses specified.
 - 4. Will perform as specified by the product manufacturer(s) in the currently published product information literature and Specification sheets.

1.9 QUALIFICATIONS

- A. Tennis/Pickle ball court surfacing installer shall submit a list of completed tennis/pickleball courts with name of client, location, completion date, and telephone number of Owner. Surfacing Contractor must also be a certified tennis/pickleball court builder as certified by the USPA and USTA.

PART 2 - PRODUCTS

2.1 COURT PREPARATION MATERIALS

- A. Acid for Cleaning and Etching Concrete Court Surface: An acid pre-treatment shall be applied to the uncoated portland cement concrete surface for the purpose of cleaning and etching and preparing the concrete surface which is to receive subsequent applications of materials.
 - 1. Use "Concrete Preparer" consisting of phosphoric acid and zinc chloride, manufactured by California Products Corporation, or an approved equal. "Concrete Preparer" is self-neutralizing, requires no after-wash, and forms a water-insoluble reaction in the surface of the concrete. This surface reaction creates a barrier to reduce the osmotic effect of water vapor and moisture which can create blisters and destroy the bond between subsequent coatings and the concrete substrate.
 - 2. Acid treatment will be applied only on previously uncoated or untreated portland cement concrete court surfaces.

- B. Primer for Concrete Court Surface: A lightly pigmented acrylic emulsion primer shall be applied to the portland cement concrete surface after it has been pre-treated with acid. Priming shall be done to ensure bonding of subsequent materials to be applied to the concrete.
 - 1. Use "California Ti-Coat," manufactured by California Products Corporation, or an approved equal.
 - 2. Priming will be done only on previously uncoated portland cement concrete surfaces.
- C. Crack Filler: Crack filler shall be acrylic latex high solids filler that is pourable, injectable or pressure applied, and that after curing, remains highly flexible and has minimum expansion/contraction over temperature extremes. Crack filler shall adhere to the adjacent surfaces of crack interiors and shall be waterproof. Crack filler shall be a material to which subsequent patching materials, base filler slurry coats and color finish surfacings will firmly bond or adhere.
 - 1. Use "Plexipave Crack Filler," manufactured by California Products Corporation, or an approved equal.
- D. Deep Patching Material: Patching material for deep patches shall be a high strength acrylic latex bonding liquid that is mixed with silica sand and portland cement. Deep patching material is for use only when directed by the Owner's Representative to correct depressions, faulty pavement, birdbaths, or other areas to be patched which are deeper than 1/4-inch.
 - 1. Use "Court Patch Binder" manufactured by California Products Corporation, or an approved equal.
- E. Slurry for Base Filler Coat and for Shallow Patching Material:
 - 1. Base filler coat and shallow patching material shall be an acrylic latex binder which is suitable for mixing with water, graded silica sand and portland cement to form a slurry with ingredient proportions appropriate to the need for the material and its proposed function. The thickness of each coat will not exceed the maximum of 1/4-inch. The slurry coat material will be applied for the following purposes:
 - a. Patch birdbaths and shallow depressions in a series of coatings that are 1/4-inch or less in thickness.
 - b. Reduce porosity and to fill hairline cracks and other minor irregularities in the surface of the court pavement.
 - c. Level and true-up the paved court surface prior to the application of the color finish materials.
 - d. Provide the entire surface of the court pavement with a uniform texture. Uniform texture will provide uniform shoe traction, uniform ball bounce, uniform appearance, and a uniform feel to the hands.
 - 2. Use black pigmented "California Acrylic Resurfacer," manufactured by California Products Corporation, or an approved equal.
 - 3. A minimum of 2 slurry coats is required over the entire surface of court pavement. See PART 3 - EXECUTION.
 - 4. Use of an asphaltic emulsion as a slurry for the base filler coats will not be permitted.

2.2 COLOR FINISH MATERIALS

- A. Color finish materials shall be highly pigmented texturized acrylic latex coatings containing only inert mineral pigment colorants which shall be suitable for exterior use. Color coating shall contain sufficient filler to give a uniform appearance and texture. Material is to be fade resistant, tack free, and subject to no deterioration due to temperature, moisture, or ultraviolet rays of the sun. Nothing in the color coating shall be detrimental to the existing or newly applied surface or court preparation materials. Material for the color finish shall contain no vinyl's, butadiene styrene or alkyds, and shall be thinned with water only, in accordance with the manufacturer's directions. This color finish system shall contain no asphalt, tar emulsions, or non-acrylic resins.
- B. Use a minimum of 2 coats of job-mixed "Fortified Plexipave," and 1-coat of "Plexichrome" as manufactured by California Products Corporation, or an approved equal.
- C. Color selections (2 colors) of finish materials will be made by the Owner. Provide a manufacturer's color chart in each submittal set as required in PART 1 - GENERAL.

2.3 STRIPING PAINT

- A. This material shall be a non-glare, high-hiding, highly reflective acrylic latex paint. Oil-based or solvent-type paints are not permissible. Striping paint shall be pre-mixed with fine silica fillers per the manufacturer's recommendation to provide "texturized" line paint which when dry has the same texture as the rest of the playing surface.
- B. Paint shall be a 100 percent acrylic emulsion type containing no alkyds, butadiene styrene, or vinyl's and shall be thinned with water only. Paint shall also be suitable for application by brush, spray, or roller. All materials used in the manufacture of the paint shall be of good commercial quality entirely suitable for the purpose intended under normal conditions of use. For white color, the opaque portion of the pigment shall be rutile titanium dioxide, and vehicle shall consist of 100 percent acrylic polymer dispersed in water together with the minimum amounts of necessary additives, such as pigment dispersants, anti-foaming agents, and preservatives, but no driers shall be used. Paint shall meet a minimum requirement of total solids (percent by weight of paint) of 51.5 percent and a maximum pigment content (percent by weight of paint) of 34 percent. White paint shall contain not less than 3 pounds per gallon of treated rutile titanium dioxide. A minimum fineness of grind of 4 and a viscosity (Krebs Units) of 70 minimum and 85 maximum is required. Paint shall brush easily and have good flowing, leveling, and spreading characteristics.
- C. Use white "Hi-Hide Plexicolor Line Paint," manufactured by California Products Corporation, or an approved equal.

2.4 MATERIAL LABELS AND CONTAINERS

- A. Materials specified for application as surfacing and patching materials shall be delivered to the site in sealed containers, properly labeled with the manufacturers' labels, and stenciled with the proper batch code numbers. Products packaged or labeled in any other manner will not be accepted. Mixing with clean fresh water shall only be done at the jobsite.

2.5 APPROVED EQUAL SUBSTITUTIONS

- A. Court Master, Laykold, Novacrylic, Dynaflex and WorldClass may be considered as substitute products subject to the approval of Owner and Architect.

PART 3 - EXECUTION

3.1 SURFACE PLANE AND CONDITION OF TENNIS/PICKLE BALL COURTS

- A. Tennis/Pickle ball court pavement designated to receive surfacing described herein shall have been placed to the required slope, pitch, and grade with no variations greater than 1/8-inch along a 10-foot straight edge in any direction. Minor irregularities in the surface plane shall be corrected as described in Item 3.9. Gross defects or faulty pavement will be referred to the Owner's representative for corrective directives. Concrete pavement surfaces shall have a consistent light broom finish. Other finishes are unacceptable and will have to be corrected by approved methods before Work may begin.

3.2 ADVERSE CONDITIONS

- A. Neither court preparation materials nor color finish surfacing materials will be applied when adverse conditions exist. Adverse conditions include air pollutants, blowing sand and other materials, excessive humidity, present or imminent precipitation of all kinds, high and low temperatures, adverse court surface conditions, and other conditions and limitations as specified by product manufacturer(s) that are detrimental to the product's performance and the desired results as specified herein. In general, no surfacing or court preparation Work will be done when air temperatures are below 50 degrees F or are expected to fall below 50 degrees Fahrenheit during the curing/drying period. No Work will be done when the court surface temperature is more than 140 degrees F.
- B. Protection of Materials: All materials and containers stored on the site will be protected from extremes of heat, solar radiation, and cold which adversely affect their performance.

3.3 ORDER OF WORK

- A. The following tasks shall be performed in the order listed below. Appropriate times for drying and curing shall occur after each application of the various court preparation and color finish materials.
- B. After court pavement is placed, curing time of 30 days must elapse before Work begins.
- C. Grind Off Ridges and Bumps (if necessary): Remove all ridges and make certain all edges are feathered to avoid patched appearance and different textures. A terrazzo grinder, hand stone or scraper may be used.
- D. Sweep and wash courts.
- E. Perform acid treatment.
- F. Apply epoxy primer.
- G. Apply acrylic resurfacer (one coat).
- H. Fill cracks.
- I. Patch birdbaths (and execute deep patching if so directed).
- J. Apply second coat (minimum) of acrylic resurfacer (2 coats, minimum).
- K. Apply 2 coats of job-mixed Fortified Plexipave.
- L. Apply 1 coat of Plexichrome without any sand.
- M. Paint court striping.
- N. Clean up.
- O. Inspection for final acceptance.

3.4 SWEEP AND WASH COURTS

- A. This Work will be done on all court surfaces prior to proceeding with any of the other Work listed below.
- B. Sweeping: Sweep all court surfaces to remove gravel, dust, loose soil, dead vegetation, chipped and spalled concrete, foreign matter, and other debris before washing.
- C. Washing: Courts will be washed clean of dirt, mud, grease, oil, airborne pollutants, and loose material by means of scrub brushes, strong detergent, and a high-pressure stream of water.

3.5 ACID TREATMENT

- A. After a small test area on one corner of a court has been approved by Owner's Representative the entire surface of the concrete courts shall be uniformly treated with acid.
- B. Application: Dilute 1 gallon of "Concrete Preparer" with 4 gallons of clean water before using. Apply at the rate of 1 undiluted gallon of "Concrete Preparer" per 700 to 900 square feet of court surface. Apply material liberally to concrete surface by pouring onto surface and spread by broom. Do not rinse but allow to dry thoroughly before applying subsequent materials. All puddles should be dispersed by broom or squeegee after reaction has stopped.

3.6 PRIMING

- A. Apply the epoxy primer to acid treated and thoroughly cleaned concrete surfaces with a short nap phenolic core roller. Apply a thin, wet coat. Apply 1 coat of acrylic resurfacer within 1 to 2 hours.

3.7 FILL CRACKS

- A. Cracks must first be blown clean with an air compressor or a high-pressure stream of water. Structural cracks and slab settlements must be referred to Owner's representative for action. Hairline cracks and other minor cracks will be filled by squeezing a narrow bead of crack filler into voids using a blunt-nose hand trowel or a broad knife. Cracks should be filled to a minimum depth of 1/4-inch. After the crack filler has been forced into the crack, the edges shall be wiped clean with a damp cloth. (This prevents edge build-up which would require sanding as a corrective measure.)

3.8 DEEP PATCHING

- A. Deep patching will be done only as directed by Owner's representative to correct major defects in the court pavement.
- B. For depressions up to 3/4-inch in thickness the following mix shall be applied by steel trowel or metal screed, filling the depression, and bringing it to grade.
 - 1. Mix 100 pounds #100 mesh silica sand, 3 gallons "Court Patch Binder," and 1-gallon portland cement.

- C. Mix in a clean mortar box or mortar mixer to a workable consistency. A small quantity of water may be added to increase the workability when the surface temperature is high. Deep patching mix may be applied directly to depressed area after thorough cleaning of surface. Patch should be allowed to cure for 24 hours prior to the application of subsequent materials.
- D. Depressions, in excess of 3/4-inch depth, must receive multiple applications of the patching material, allowing 24 hours curing time between applications. Each application must be feathered out to a fine edge. Any rough edges must be rubbed down with a grinder or an abrasive rubbing stone to remove roughness.

3.9 PATCH BIRDBATHS AND OTHER MINOR SURFACE IRREGULARITIES

- A. Determination: A birdbath is a depression in the plane of the court surface in which water settles after a rain or flooding. All courts will be flooded in the presence of the Owner or his representative. After surrounding areas have dried, if water remaining in depressions on the court is of a depth to cover the thickness of a new 5-cent piece, the depression is a birdbath to be filled. Perimeter of the birdbath will be marked by chalk or keel.
- B. Mixing: Mix slurry for shallow patching material according to the following proportions:

"Acrylic Resurfacer"	55	gals.
Water	28	gals.
Sand (40-60 mesh)	1,100	lbs.
Cement: Portland Type I or Hi Early	4	lbs.

- C. Filling: Birdbaths shall be filled with the specified shallow patching material after the courts have been flooded and have dried. If necessary, patching material shall be applied in successive coats not exceeding 1/4-inch in thickness so the patch is "built-up." Coats shall not be so deep or thick that proper curing and adhesion is not achieved.
- D. Leveling: Patching material shall be struck off with a trowel or with a straight edge screed, the length of which exceeds the width of the birdbath. Patch will be struck off level to the same elevation as the surrounding court surface. Original birdbath will probably be circular or elliptical in shape. Finished patch should be roughly square or rectangular, parallel to the court edges.
- E. Other Irregularities: Other irregularities in the surface will be marked and patched by substantially the same method as described for birdbaths. However, the thickness of the patch will vary with the depth of the irregularity below the surrounding proper plane. Bumps and ridges will have been scraped off or ground off prior to the sweeping and cleaning of courts which occurs prior to the acid treatment.

3.10 APPLY SLURRY FOR BASE FILLER COATS

- A. Work will not begin until all steps of Work described above have been completed and have been approved by the Owner's Representative.
- B. Mixing: "Acrylic Resurfacer" shall be mixed per manufacturers' recommendations, varying the water-sand ratios to the latex binder within recommended limits as appropriate to the court finish and desired results. Desired results are to achieve a uniformity of texture and a trueness of plane as stated under the description of "slurry" in PART 2 - PRODUCTS. The final mix should be a creamy slurry of easy spreading consistency, but thick enough to prevent sand drop-out. Mix slurry using the following proportions and methods:

"Acrylic Resurfacer"	55	gals.
Water	20 - 40	gals.
Sand (first coat 60-80 mesh, second coat 720 sand)	600 - 900	lbs.
Liquid Yield	112 - 138	gals.

- C. Mix ingredients thoroughly in a mortar box or mortar mixer. Use clean, dry sand and clean, potable water to make mixes. Quantity of sand and water in the above mix may be adjusted by 10 percent to the roughness and temperature of the surface.
- D. Application: Entire surface of the courts will be uniformly covered with the specified base filler coat material. Slurry should have the consistency of cream while being spread. It shall be applied with a 70 Durometer flexible rubber squeegee, 24 to 36 inches in width. Final dried coat will be uniform in texture, completely hiding all concrete irregularities, and will be smooth and free of shrinkage cracks or mud cracks. Allow each application of slurry to dry thoroughly. Scrape off all ridges, and rough spots prior to any subsequent application of slurry or color finish coatings.
 - 1. A minimum of 2 coats are required. As many more coats as are necessary will be applied if 2 coats do not achieve the desired results.
 - a. Desired results are as stated under the description of "slurry" in PART 2 - PRODUCTS.
 - 2. Rate of application for the slurry coat is 1 gallon of unmixed "Acrylic Resurfacer" per 135 to 180 square feet of court surface. The thickness of each coat will not exceed the maximum of 1/4-inch.

3.11 APPLY COLOR FINISH COATS

- A. Work will not begin until the base slurry coats have been completed and have been approved by Owner's Representative.
- B. Job-Mixed "Fortified Plexipave:"
 - 1. Mixing: "Fortified Plexipave" shall be a job mixture of "Plexipave Color Base," "Plexichrome," and water as proportioned below:
 - a. Plexipave Color Base: 30 gallons.
 - b. Plexichrome: 20 gallons.
 - c. Water: 20 gallons.
 - 2. Within approved limits, the mix may be adjusted on the job depending on porosity of surface and ambient temperature at the time of application.
 - 3. Application: Apply a minimum of two coats of "Fortified Plexipave" with 24-inch or 36-inch 50 Durometer long flexible rubber squeegees as approved by the manufacturer. Rate of application for each coat shall be 1 gallon of mix per 135 to 180 square feet, depending on surface porosity. Final application shall be made crosswise to the court's length and shall be smooth, uniform and without puddles or thick spots that may cause "mud cracking." Prior to applying final coat, make a final, careful inspection and remove any ridges, loose, or foreign particles and bumps.
- C. "Plexichrome" Finish Coat:
 - 1. Mixing: Dilution rate shall not exceed 1 part water to 1 part "Plexichrome."
 - 2. Application: Apply with wide hair-type push broom or with rubber squeegee followed by a wide hair-type push broom. Application shall be made crosswise to the court's length and shall be smooth and uniform. Rate of application is 1 undiluted gallon per 180 to 225 square feet.
- D. Color Uniformity: Final result of applying the color finish coats shall be a uniform color throughout when viewed from a distance of 25 feet from any edge of the court at mid-day.

3.12 PAINT COURT STRIPING

- A. Two-inch-wide textured white lines, conforming to the U.S. Pickleball Association and USTA Specifications, shall be laid out according to Drawings on court markings. Line paint shall be applied by brush, roller or spray, free from any fogging, splatter or overspray.

3.13 CLEAN UP

- A. Contractor is responsible for removing and disposing of all containers, surplus materials, rubbish, trash, debris, or other foreign material resulting from his Work. In general, site shall be left in a clean and orderly condition acceptable to Owner.

END OF SECTION

PART 1 - SECTION 32 13 73 - CONCRETE PAVING JOINT SEALANTS GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Expansion and contraction joints within Portland cement concrete pavement.
 - 2. Joints between Portland cement concrete and asphalt pavement.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.

1.2 REFERENCES

- A. ASTM C1193 - Use of Joint Sealants.
- B. ASTM D5249 - Backer Material for Use with Cold-and-Hot-Applied Joint Sealants in Portland Cement Concrete and Asphalt Joints.
- C. ASTM D1751 - Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
- D. ASTM D3405 - Joint Sealants, Hot Applied, for Concrete and Asphalt Pavements.
- E. ASTM D3406 - Joint Sealant, Hot Applied, Elastomeric Type, for Portland Cement Concrete Pavements.
- F. ASTM C920 - Elastomeric Joint Sealants.

1.3 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples for Verification: For each type and color of joint sealant required. Install joint-sealant samples in 1/2-inch-wide joints formed between two 6-inch-long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
- C. Product Certificates: Signed by manufacturers of joint sealants certifying products furnished comply with requirements and suitable for use indicated.
- D. Compatibility and Adhesion Test Reports: From joint sealant manufacturer indicating:
 - 1. Materials forming joint substrates and joint-sealant backer materials were tested for compatibility and adhesion with joint sealants.
 - 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.
- E. Product Test Reports: From a qualified testing agency indicating joint sealants comply with requirements, based on comprehensive testing of current product formulations.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Experienced installer who specialized in installing joint sealants similar in material, design, and extent to those indicated for Project and work resulted in joint-sealant installations with a record of successful in-service performance.
- B. Source Limitations: Obtain each type of joint sealant through one source and manufacturer.

- C. Product Testing: Obtain test results for Article 1.3.E "Product Test Reports," from a qualified testing agency, based on testing current sealant formulations within a 36-month period.
 - 1. Testing Agency Qualifications: Independent testing agency qualified per ASTM C021 to conduct testing indicated, as documented per ASTM E548.
 - 2. Test joint sealants for compliance with requirements indicated by referencing standard specifications and test methods.
- D. Preconstruction Compatibility and Adhesion Testing: Submit to joint sealant manufacturer, for testing indicated, samples of materials that contact or affect joint sealants. Use manufacturer-standard test methods to determine if priming and other specific joint preparation techniques required to obtain rapid, optimum adhesion of joint sealants to joint substrates.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original, unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multicomponent materials.
- B. Store and handle materials per manufacturer-written instructions to prevent deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install joint sealants under these conditions:
 - 1. Ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer.
 - 2. Joint substrates are wet.
 - 3. Blowing dust conditions exist.
- B. Joint-Width Conditions: Do not install joint sealants where joint widths are less than allowed by joint sealant manufacturer for application indicated.
- C. Joint-Substrate Conditions: Do not install joint sealants until contaminants able to interfere with adhesion are removed from joint substrates.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backing materials, and other related materials compatible with one another and with joint substrates under conditions of service and application, per joint sealant manufacturer based on testing and field experience.
- B. Bituminous premolded expansion joint shall conform to ASTM D1751.
- C. Elastomeric sealant for contraction joints shall be, or equivalent to, W.R. Meadows "SOF-SEAL" or "Gardox."
 - 1. Hot-poured sealant for joints between Portland cement concrete and bituminous concrete shall conform to ASTM D3405.
 - 2. Hot-poured sealant for all other joints in Portland cement concrete pavement shall conform to ASTM D3406.
 - 3. Cold-poured joint sealant shall conform to ASTM C920.
- D. Mix material per manufacturer recommendations.

2.2 JOINT-SEALANT BACKER MATERIALS

- A. Provide joint-sealant backer materials that are nonstaining, compatible with joint substrates, sealants, primers, and other joint fillers, and approved for applications indicated by joint sealant manufacturer based on field experience and laboratory testing.
- B. Round Backer Rod for Cold- and Hot-Applied Sealants: ASTM D5249, Type 1, of diameter and density required to control sealant depths and prevent bottom-side adhesion of sealant.
- C. Backer Strips for Cold- and Hot-Applied Sealants: ASTM D5249, Type 2, thickness and width required to control sealant depths, prevent bottom-side adhesion of sealant, and fill remainder of joint opening under sealant.
- D. Round Backer Rods for Cold-Applied Sealants: ASTM D5249, Type 3, diameter and density required to control sealant depths and prevent bottom-side adhesion of sealant.

2.3 PRIMERS

- A. Product recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, determined from preconstruction joint-sealant-substrate and field tests.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions are corrected.

3.2 PREPARATION

- A. Surface Clean Joints: Clean out joints immediately before installing joint sealants to comply with joint sealant manufacturer's written instructions.
- B. Joint Priming: Prime joint substrates where indicated or recommended in writing by joint sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

3.3 INSTALL JOINT SEALANTS

- A. Comply with joint sealant manufacturer's written installation instructions applicable to products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with ASTM C1193 recommendations for use of joint sealants as applicable to materials, applications, and conditions indicated.

- C. Install backer materials type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths to allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of backer materials.
 - 2. Do not stretch, twist, puncture, or tear backer materials.
 - 3. Remove absorbent backer materials that are wet before sealant application and replace them with dry materials.
- D. Install sealants by proven techniques to comply with these when backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses provided for each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths to allow optimum sealant movement capability.
- E. Tooling Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants per specified requirements to form smooth, uniform beads of configuration indicated, eliminate air pockets, and ensure contact and adhesion of sealant with sides of joint.
 - 1. Remove excess sealants from surfaces adjacent to joint.
 - 2. Use tooling agents approved in writing by joint sealant manufacturer and do not discolor sealants or adjacent surfaces.
- F. Provide joint configuration to comply with joint sealant manufacturer's written instructions, unless otherwise indicated.
- G. Provide recessed joint configuration for silicone sealants of recess depth and at locations indicated.

3.4 CLEANING

- A. Clean off excess sealants or sealant smears adjacent to joints as Work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original Work.

END OF SECTION

PART 1 - SECTION 32 17 23 - PAVEMENT MARKINGS GENERAL

1.1 SUMMARY

- A. Section includes painting markings and stripes on pavement surface applied per Specifications at locations shown on Plans or as directed by Architect.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Paint shall meet current local authority having jurisdiction Specifications for pavement markings and requirements of the following Specifications:
 - 1. Federal Test Method Standard No. 141, Methods 4121, 4184, 4281, and 6121.
 - 2. Fed. Spec. TT-P-85b.
 - 3. Fed. Spec. TT-P-115A.
 - 4. Fed. Spec. TT-14-16, Methods 408.1, 409.1, and 409.2.
 - 5. ASTM D771-5S.

PART 3 - EXECUTION

3.1 CONSTRUCTION METHODS

- A. Weather Limitations: Paint only when surface is dry, atmospheric temperature is above 45 degrees F, and weather is not foggy or windy.
- B. Equipment:
 - 1. All Work equipment shall be approved by Architect and include apparatus necessary to properly clean existing surface, mechanical marking machine, and such auxiliary hand-painting equipment as necessary to satisfactorily complete Job.
 - 2. Mechanical marker shall be atomizing spray marking machine suitable for application of traffic paint. It shall produce an even and uniform film thickness at required coverage and designed to apply markings of uniform cross sections and clear-cut edges without running or spattering.
- C. Preparation of Surface:
 - 1. Immediately before paint application, surface shall be dry and free from dirt, grease, oil, laitance, or other foreign material which reduce bond between paint and pavement. Clean area to paint by sweeping, blowing, or other methods required to remove all dirt, laitance, and loose materials.
 - 2. Do not apply paint to Portland cement concrete pavement until concrete in areas to paint is clean of curing material. Use sandblasting or high-pressure water to remove curing material from concrete surfaces.

- D. Layout of Markings: On those sections of pavement where no previously-applied markings are available to serve as a guide, lay out proposed markings in advance of paint application.
- E. Application:
 - 1. Apply markings at locations and to dimensions and spacing shown on Plans. Do not apply paint until layout and condition of surface are approved by Architect.
 - 2. Mix paint per manufacturer's instructions and apply to pavement with marking machine at rate of 100 to 110 square feet per gallon. Do not add thinner. Allow 15 days to elapse between placing a bituminous surface course or seal coat and applying paint.
 - 3. Marking edges shall not vary from a straight line more than 1/2-inch in 50 feet, and dimensions shall be within a tolerance of plus or minus 5 percent. If Plans indicate, distribute glass spheres to surface of marked areas immediately after applying paint. Furnish a dispenser properly designed to attach to marking machine and suitable for dispensing glass spheres. Apply spheres at rate of 10 pounds per gallon of paint.
 - 4. Contractor shall furnish certified test reports for materials shipped to Project. Reports shall not be interpreted as basis for final acceptance. Contractor shall notify Architect upon arrival of a shipment of paint to jobsite. Return all emptied containers to paint storage area for checking by Architect. Do not remove containers from site or destroy until authorized by Architect.
- F. Protection: After application of paint, protect all markings from damage until paint is dry. Protect all surfaces from disfiguration by spatter, splashes, spillage, or drippings of paint.

END OF SECTION

SECTION 32 31 13 - CHAIN-LINK FENCES AND GATES

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for chain-link fences and gates.
 - 1. Fence and gate posts, rails, latches, drop rods, and fittings.
 - 2. Chain-link fabric, reinforcements, and attachments.
 - 3. Gates and hardware.
- B. Shop Drawings: Include plans, elevations, Sections, details, and attachments to other Work. Show accessories, hardware, gate operation, and operational clearances.
- C. Samples for Verification: Prepared on samples of size indicated below:
 - 1. Polymer-Coated Components: In 6-inch lengths for components and on full-sized units for accessories.

1.3 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified installer.
- B. Product Certificates: For each type of chain-link fence, and gate, from manufacturer.
- C. Product Test Reports: For framing strength according to ASTM F1043.
- D. Field quality-control reports.
- E. Warranty: Sample of special warranty.

1.4 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For the following to include in emergency, operation, and maintenance manuals:
 - 1. Polymer finishes.
 - 2. Gate hardware.

1.5 QUALITY ASSURANCE

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review coordination of interlocked equipment specified in this Section and elsewhere.

1.6 PROJECT CONDITIONS

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

1.7 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Faulty operation of gate operators and controls.
 - b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 2. Warranty Period: Fifteen years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CHAIN-LINK FENCE FABRIC

- A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist. Comply with CLFMI Product Manual and with requirements indicated below:
 - 1. Fabric Height: As indicated on Drawings.
 - 2. Steel Wire Fabric: Wire with a diameter of 0.148-inch.
 - a. Mesh Size: Two inches.
 - b. ASTM F 668, Class 2a or Class 2b over zinc-coated steel wire.
 - c. Zinc-Coated: Minimum 1.2 ounces zinc coating per square foot (ASTM A392).
 - 3. Selvage: Knuckled at both selvages.

2.2 FENCE FRAMING

- A. Posts and Rails: Comply with ASTM F1043 for framing, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F1043 or ASTM F1083 based on the following:
 - 1. Fence Height: As indicated on Drawings.
 - 2. Horizontal Framework Members: Intermediate top and bottom rails complying with ASTM F1043.
 - a. Top Rail: As indicated.
 - 3. Brace Rails: Comply with ASTM F1043.

2.3 SWING GATES

- A. General: Comply with ASTM F900 for gate posts and single or double swing gate types.
 - 1. Gate Leaf Width: As indicated on Drawings.
 - 2. Gate Fabric Height: As indicated on Drawings.
- B. Pipe and Tubing:
 - 1. Zinc-Coated Steel: Comply with ASTM F1043 and ASTM F1083; manufacturer's standard protective coating and finish.
 - 2. Gate Posts: Round tubular steel.
 - 3. Gate Frames and Bracing: Round tubular steel.

- C. Frame Corner Construction: Welded.
- D. Hardware:
 - 1. Hinges: 360-degree inward and outward swing.
 - 2. Latches permitting operation from both sides of gate with provision for padlocking accessible from both sides of gate.

2.4 FITTINGS

- A. General: Comply with ASTM F626.
- B. Post Caps: Provide for each post.
 - 1. Provide line post caps with loop to receive tension wire or top rail.
- C. Rail and Brace Ends: For each gate, corner, pull, and end post.
- D. Rail Fittings: Provide the following:
 - 1. Top Rail Sleeves: Pressed-steel or round-steel tubing not less than 6 inches long.
 - 2. Rail Clamps: Line and corner boulevard clamps for connecting intermediate and bottom rails in the fence line-to-line posts.
- E. Tension and Brace Bands: Pressed steel.
- F. Tension Bars: Steel, length not less than 2 inches shorter than full height of chain-link fabric. Provide 1 bar for each gate and end post, and 2 for each corner and pull post, unless fabric is integrally woven into post.
- G. Truss Rod Assemblies: Steel, hot-dip galvanized after threading rod and turnbuckle or other means of adjustment.
- H. Tie Wires, Clips, and Fasteners: According to ASTM F626.
 - 1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, complying with the following:
 - a. Hot-Dip Galvanized Steel: 0.148-inch-diameter wire; galvanized coating thickness matching coating thickness of chain-link fence fabric.
- I. Finish:
 - 1. Metallic Coating for Pressed Steel or Cast Iron: Not less than 1.2 ounces per square feet zinc.

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 CHAIN-LINK FENCE INSTALLATION

- A. Post Bracing and Intermediate Rails: Install according to ASTM F567, maintaining plumb position and alignment of fencing. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gate posts and at both sides of corner and pull posts.
 - 1. Locate horizontal braces at midheight of fabric 72 inches or higher, on fences with top rail and at two-third fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.

- B. Top Rail: Install according to ASTM F567, maintaining plumb position and alignment of fencing. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.
- C. Intermediate and Bottom Rails: Install and secure to posts with fittings.
- D. Chain-Link Fabric: Apply fabric to inside of enclosing framework. Leave 1-inch between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.
- E. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not more than 15 inches on center.
- F. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric per ASTM F626. Bend ends of wire to minimize hazard to individuals and clothing.
 - 1. Maximum Spacing: Tie fabric to line posts at 12 inches on center and to braces at 24 inches on center.

3.3 GATE INSTALLATION

- A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.4 ADJUSTING

- A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Lubricate hardware and other moving parts.

3.5 DEMONSTRATION

- A. Train Owner's personnel to adjust, operate, and maintain chain-link fences.

END OF SECTION

SECTION 32 33 00 - SITE FURNISHINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Bike Racks.
 - 2. Bleachers.
- B. Related Requirements:
 - 1. Division 01 Specification Sections apply to Work of this Section.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified.
- C. Product Schedule: For site furnishings. Use same designations indicated on Drawings.

1.3 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For site furnishings to include in maintenance manuals.

PART 2 - PRODUCTS

2.1 BIKE RACKS

- A. Nine-Loop Mill Steel Wave Bike Rack, Embed Mount SKU # SR9M | Brand: Wagner.

2.2 BLEACHERS

- A. The Park and Facilities Catalog: Twenty-four-foot-long, 3-Row Aluminum Bleachers - Sideline Series, Model #569-1214.

2.3 GENERAL FINISH REQUIREMENTS

- A. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with installer present, for compliance with requirements for correct and level finished grade, mounting surfaces, installation tolerances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. Comply with manufacturer's written installation instructions unless more stringent requirements are indicated. Complete field assembly of site furnishings where required.
- B. Unless otherwise indicated, install site furnishings after landscaping and paving have been completed.
- C. Install Site furnishings level, plumb, true, and positioned at locations indicated on Drawings.
- D. Post Setting: Set cast-in support posts in concrete footing with smooth top, shaped to shed water. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb or at correct angle and are aligned and at correct height and spacing. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.

END OF SECTION

SECTION 32 92 00 - TURF AND GRASSES

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 DEFINITIONS

- A. Duff Layer: The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.
- B. Finish Grade: Elevation of finished surface of planting soil.
- C. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- D. 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.
- E. 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.
- F. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
- G. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or top surface of a fill or backfill before planting soil is placed.
- H. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- I. 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.

1.3 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.
- B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
 - 1. Certification of each seed mixture for turfgrass sod. Include identification of source and name and telephone number of supplier.

- C. Qualification Data: For qualified landscape installer.
- D. Product Certificates: For soil amendments and fertilizers, from manufacturer.
- E. Material Test Reports: For existing native surface topsoil and imported or manufactured topsoil.
- F. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of turf during a calendar year. Submit before expiration of required initial maintenance periods.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape installer whose Work has resulted in successful turf establishment.
 - 1. Professional Membership: Installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
 - 2. Experience: Five years' experience in turf installation in addition to requirements in Section 01 40 00 "Quality Requirements."
 - 3. Installer's Field Supervision: Require installer to maintain an experienced full-time supervisor on Project site when Work is in progress.
 - 4. Maintenance Proximity: Not more than 2 hours normal travel time from installer's place of business to Project site.
 - 5. Pesticide Applicator: State licensed, commercial.

1.5 DELIVERY, STORAGE, AND HANDLING

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

PART 2 - PRODUCTS

2.1 TURFGRASS SOD

- A. Turfgrass Sod: Approved complying with "Specifications for Turfgrass Sod Materials" in TPI's "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture, strongly rooted, and capable of vigorous growth and development when planted.
- B. Turfgrass Species: Cynodon Dactylon (TIFTUF).

2.2 TOPSOIL

- A. Topsoil: ASTM D 5268, pH range of 5.5 to 7, a minimum of 2 percent organic material content; free of stones 1-inch or larger in any dimension and other extraneous materials harmful to plant growth.
 - 1. Topsoil Source: Reuse surface soil stockpiled on-site. Verify suitability of stockpiled surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.
 - a. Supplement with imported or manufactured topsoil from off-site sources when quantities are insufficient. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches deep; do not obtain from playa lake areas.
 - 2. Topsoil Source: Import topsoil or manufactured topsoil from off-site sources. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches deep; do not obtain from playa lake areas.
 - 3. Topsoil Source: Amend existing in-place surface soil to produce topsoil. Verify suitability of surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.
 - a. Surface soil may be supplemented with imported or manufactured topsoil from off-site sources. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches deep; do not obtain from playa lake areas.

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 A/E and replace with new planting soil.

3.2 PREPARATION

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

3.3 TURF AREA PREPARATION

- A. Limit turf subgrade preparation to areas to be planted.
- B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 6 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.
 - 1. Spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil.
 - a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
 - b. Mix lime with dry soil before mixing fertilizer.
 - 2. Spread planting soil to a 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.
 - a. Reduce elevation of planting soil to allow for soil thickness of sod.
- C. Unchanged Subgrades: If turf is to be planted in areas unaltered or undisturbed by excavating, grading, or surface-soil stripping operations, prepare surface soil as follows:
 - 1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
 - 2. Loosen surface soil to a depth of at least 6 inches. Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 6 inches of soil. Till soil to a homogeneous mixture of fine texture.
 - a. Apply fertilizer directly to surface soil before loosening.
 - 3. Remove stones larger than 1-inch in any dimension and sticks, roots, trash, and other extraneous matter.
 - 4. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.
- D. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2-inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.
- E. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- F. Before planting, obtain A/E's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 SODDING

- A. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy.
- B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to subgrade or sod during installation. Tamp and roll lightly to ensure contact with subgrade, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.
 - 1. Lay sod across angle of slopes exceeding 1:3.
- C. Saturate sod with fine water spray within 2 hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches below sod.

3.5 TURF MAINTENANCE

- A. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and mulch 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.
- B. Watering: Keep turf uniformly moist to a depth of four inches.
 - 1. Schedule watering to prevent wilting, puddling, erosion, and displacement of mulch.
 - 2. Water turf with fine spray at a minimum rate of 1-inch per week unless rainfall precipitation is adequate.
- C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 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. Schedule initial and subsequent mowings to maintain the following grass height:
 - 1. Mow bermudagrass to a height of 1/2- to 1-inch.
- D. Turf Postfertilization: Apply fertilizer after initial mowing and when grass is dry.
 - 1. Use fertilizer that will provide actual nitrogen of at least 1 lb./1,000 sq. ft. to turf area.

3.6 SATISFACTORY TURF

- A. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.

3.7 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.

END OF SECTION