Competitive Sealed Proposal

Paving Upgrades at Clarence Galm ES

RFCSP 2024-019

NORTHSIDE INDEPENDENT SCHOOL DISTRICT
FACILITIES AND OPERATIONS
FACILITIES DEPARTMENT
5900 EVERS ROAD, BLDG. C
SAN ANTONIO, TEXAS 78238
210-397-1200

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GENERAL CONDITIONS

NORTHSIDE INDEPENDENT SCHOOL DISTRICT

Dr. John M. Craft, Superintendent
5900 Evers Road, San Antonio, Texas 78238

FACILITIES AND OPERATIONS DEPARTMENT
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Jacob Villarreal, P.E., Executive Director of Construction & Engineering
5900 Evers Road
San Antonio, Texas 78238
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Facsimile: (210) 257-1212

PURCHASING DEPARTMENT
Andrea Tena, Director of Purchasing
607 Richland Hills Dr. #700
San Antonio, TX 78245-2149
Telephone: (210) 397-8710; Facsimile: (210) 706-8834

CONSULTANT
KCI Technologies, Inc.
2806 W. Bitters Rd, Suite 218
San Antonio, TX 78248
Date: January 31, 2024 *RFCSP No. 2024-019*

INVITATION TO OFFERORS
(Competitive Sealed Proposals)

1. ***REQUEST FOR COMPETITIVE SEALED PROPOSALS (RFCSP):*** *The Northside Independent School District ("NISD" or "Owner") of Bexar County, Texas proposes to construct a* Paving Upgrades at Clarence Galm ES *("Project") and is requesting competitive sealed proposals for the work pursuant to Chapter 2269 of the Government Code. The Owner may select the Proposal that offers the "best value" for the District based on the published selection criteria, weight of criteria, and on its ranking evaluation. Prior to approval of the recommended Offeror by the Board of Trustees, the District's representative Owner may attempt to negotiate a contract and discuss options for scope or time modifications and price change(s) associated with the modification(s) if proposed prices are more than the District's budget for the project. Proposals are to be submitted in accordance with this invitation and the accompanying instructions. Northside facilities are accessible to disabled persons. To arrange for special assistance for this meeting, the Pre-Proposal Conference, and any other meeting, or if you have questions regarding accessibility, please contact the Facilities & Operations Department in advance of the meeting.*

2. ***DESCRIPTION OF PROJECT:*** *The Project is generally described as follows:*
Paving Upgrades at Clarence Galm ES *as indicated on the drawings and specifications to include all general construction, site work, heating, air conditioning, electrical, plumbing and all other work as indicated on the construction documents.*

3. ***TIME OF COMMENCEMENT AND COMPLETION:*** *The Project must be complete and ready for occupancy not later than* August 2, 2024, *assuming that the successful Offeror is given notice of its top ranking on or before* March 27, 2024. *Any proposal must provide for final completion by this date. The Notice to Proceed may be issued up to* 45 *consecutive calendar days following the Notice of Award. The Contractor shall take this period into account in the*

preparation of its Proposal. No claim for additional time shall be considered unless this period is exceeded.

Alternately, Offerors may be asked to submit the number of calendar days required for completion of the Work, if completion of the Work shall be prior to such date.

4. ***ESTIMATED PROJECT BUDGET:*** *$737,000.00, based on the Plans and Specifications dated* January 31, 2024, *Job No.* 76E0670600 *prepared by* KCI Technologies, Inc. *("Consultant").*

5. ***PRE-PROPOSAL CONFERENCE:*** *A Voluntary Pre-Proposal Conference will be conducted at 9:00 AM on February 16, 2024, at NISD Engineering Services. 5900 Evers Road, Building E, San Antonio, TX 78238. All persons desiring to submit a proposal are encouraged to attend this conference. The District's responses to questions received at or before the Pre-Proposal Conference may be distributed at the Pre-Proposal Conference, and later questions will be distributed via addendum, where applicable.*

6. ***PROPOSAL DOCUMENTS:*** *General Contractors may obtain up to two (2) sets of Proposal Documents from the office of the Consultant upon receipt by Consultant of a deposit, in the form of cash or a check, payable to Consultant in the amount of $200.00 for each set which shall be refundable provided the General Contractor submits a valid proposal and also provided that the Contract Documents are returned to the Consultant in good condition within ten (10) days after the date of receipt of proposals. Subcontractors and suppliers may obtain up to one (1) set of Proposal Documents from the office of the Consultant upon receipt by Consultant of a deposit, in the form of cash or a check, payable to Consultant in the amount of $*200.00 *for each set which shall be refundable provided the subcontractor or supplier submits a valid proposal and also provided that the Contract Documents are returned to the Consultant in good condition within ten (10) days after the date of receipt of proposals. Additional sets may be purchased from the Consultant by General Contractor, subcontractor or supplier at the cost of $*200.00 *per set. All payments shall be made payable to the order of KCI* Technologies, Inc. *No partial sets of bid documents will be issued, and the Owner and/or Consultant will have no responsibility for errors or misinterpretations resulting from the use of incomplete sets of documents. If the Proposal Documents are timely returned but in poor condition, a reasonable amount for the cost of reproduction will be deducted from the amount of deposit and the remaining balance will refunded to the General Contractor, subcontractor or supplier. If the Proposal Documents are not timely returned to Consultant, or if a proposal is not submitted, the deposit will be forfeited.*

In addition to the above, copies of the "Proposal Documents" may be examined during normal business hours at the following location:

Virtual Builder's Exchange, LLC
4047 Naco Perrin Blvd., Ste. 100
San Antonio, Texas 78217
Telephone: (210) 564-6900

7. ***SCHEDULE FOR PROPOSAL RECEIPT AND OPENING OF PROPOSALS****: All proposals must be delivered in person or by United States mail, and finalized prior to the closing time. Proposals received by oral, telephonic, facsimile, or other electronic means are invalid and will not receive consideration. All documents required to be submitted as set forth in the Instructions to Offerors must be finalized prior to the closing time. Submittals shall be enclosed in a sealed, opaque envelope, addressed to the* ***"Board of Trustees for Northside Independent School District"*** *at the address specified below and identified as a proposal for the* Paving Upgrades at Clarence Galm ES*, RFCSP No. 2024-019.*

*If the proposal is delivered other than by personal delivery, the sealed envelope shall be enclosed in a separate envelope clearly notated **"Sealed Proposal Enclosed**" on the face thereof. All proposals must be delivered to Owner at the following address:*

Ms. Andrea Tena
Northside Independent School District
Purchasing Department
607 Richland Hills Dr., Ste. 700
San Antonio, TX 78245-2149

Proposals will be received by the Owner until 10:30 AM on February 29, 2024. *At such time, all proposals timely received shall be publicly opened and the name of the Offeror and the monetary terms of the proposal read aloud. Each Offeror shall assume full responsibility for timely delivery of its proposal to the location designated for receipt of proposal. Proposals received after the date, time, or at the wrong location, will not receive consideration and will be returned unopened. Should you have any questions regarding the bidding process, please contact the Purchasing Department via telephone at (210) 397-8710 or via email at purchasing@nisd.net.*

Attachments herein may not be required at Proposal Opening but will be required once the project is awarded or upon completion of the project.

*8. **PROPOSAL SECURITY:** Each proposal must be accompanied by proposal security in the amount of five percent (5%) of the total proposal, including all additive alternatives, pledging that the successful Offeror will, within 30 calendar days after the successful Offeror is notified of receipt of its proposal, enter into a written contract with the Owner on the terms stated in the "Proposal Documents", as evidenced by the unconditional execution and delivery of such contract, and furnish payment and performance bonds, evidence of insurance and other submittals as required by the "Proposal Documents". Should the successful Offeror fail or refuse to enter into such contract or furnish such bonds or evidence of insurance within the time above-stated, such proposal security shall be forfeited to the Owner as damages, not as a penalty. Such proposal security shall be in the form of cash, certified funds payable to the order of the Owner, or a bond in favor of the Owner. The bond shall be on AIA Document A310 "2010 Edition," and shall be issued by a corporate surety duly authorized and admitted to do business in the State of Texas, and licensed by the State of Texas to issue surety bonds and to be an executed original. If the amount of the bond exceeds the legal underwriting limitation of the surety, the Offeror and the surety shall provide the Owner with evidence that the excess is reinsured with one or more reinsurers who are duly authorized, accredited, and licensed to do business in the State of Texas. Any proposal which is not accompanied with proposal security in the form and amount required herein shall be rejected as nonconforming. The Owner shall have the right to retain the security of all Offerors to whom an award is being considered until either (i) the Contract has been unconditionally executed and delivered by the parties and any required payment and performance bonds, evidence of insurance and other submittals have been furnished, or (ii) all proposals have been rejected by the Owner without the acceptance of any proposal.*

INSTRUCTIONS TO OFFERORS
(Competitive Sealed Proposals)

PROPOSAL DOCUMENTS*: The "Proposal Documents" shall include the Invitation to Offerors, these Instructions to Offerors, the Contract Documents (as defined below), the Proposal Form, and any other sample proposal and contract forms. The Contract Documents shall consist of the Agreement between Owner and Contractor (AIA Form A101-2017, the "Contract"), the General Conditions of the Contract for Construction, as modified by Northside Independent School District, Owner for the Project (AIA Form A201-2017), the Owner's Special Conditions included with the "Proposal Documents", and the Drawings, and all Addenda issued prior to execution of the Contract. Each Offeror shall carefully study and compare the Contract Documents with one another and with any existing work or work under construction, shall examine the site and local conditions, and shall at once report to the Consultant any errors, inconsistencies or ambiguities discovered. By submitting a proposal, the Offeror represents that the Offeror has prior experience on construction projects of the same or similar type, nature and class as the Work; that the Offeror has read and understands the "Proposal Documents", including the Contract Documents; that the proposal is made in accordance with the "Proposal Documents"; and that the Offeror has visited the site, become familiar with the local conditions under which the Work is to be performed, and has correlated the Offeror's site observations with the requirements of the Contract Documents.*

Offerors may request clarification or interpretation of "Proposal Documents". Any such request must be in writing and must be received by the Consultant at least FIVE (5) days prior to the last date for receipt of proposals. Interpretations, corrections and/or changes of or to the "Proposal Documents" will be made by written Addendum. Any interpretations, corrections or changes of or to the "Proposal documents", made in any other manner will not be binding upon the Owner, and Offerors may not rely thereon.

Any discrepancy or conflict with the Drawings shall be brought to the attention of Consultant and the Owner. Discrepancies or conflicts not brought to Consultant's and Owner's attention and clarified during the proposal process for the Project will be deemed to have been priced in the more costly manner or difficult manner, and the better quality or greater quantity of the Work shall be provided by the Contractor in accordance with Consultant's interpretation.

Offeror acknowledges and accepts that any costs incurred from the Offeror's participation in this RFCSP process shall be at the sole risk and responsibility of the Offeror.

Note: Do not contact members of the Board of Trustees, the Superintendent or other employees of the Northside Independent School District. Contact with any of these prohibited individuals after issuance of the RFCSP and before selection is made, may result in disqualification of your proposal.

ADDENDA*: Addenda will be e-mailed to all who are known by the Consultant to have received a complete set of "Proposal Documents", and will be sent to the e-mail address of each Offeror furnished by such Offeror for such purposes. In addition, copies of Addenda will be made available for inspection wherever "Proposal Documents" are on file for that purpose. Each Offeror shall acknowledge in its proposal its receipt of all Addenda issued. Failure of an Offeror to receive any such Addenda shall not relieve the*

Offeror from any obligation under its proposal as submitted. All Addenda so issued shall become a part of the Contract Documents.

ALTERNATES: *Alternate bids are sums added or deducted from the Base Bid Proposal(s) for certain work defined in the Contract Documents. The Offeror shall clearly distinguish on the Proposal Form whether the proposed Alternate(s) is additive or deductive. If there is not effective cost change the Offeror shall insert the term "No Cost" meaning that the Alternate may be awarded, but there will be no cost impact to the work if accepted by the Owner. The Owner shall reserve the right to award Alternates in any order without regard to the listing on the Proposal Form. Alternates shall include all labor, material, equipment, overhead and profit. A Proposal may be deemed, at the sole discretion of the Owner, to be non-responsive and receive no further consideration if Alternate bid items are not bid.*

FORM OF PROPOSAL*: Proposals shall be submitted on the prescribed form, and all blanks on the proposal form shall be completed, in ink or type-written, with sums expressed in both words and figures (in case of discrepancy between the two, the amount written in words shall govern). All requested alternates shall be priced, and if no change in the base price is required, the phrase "No Change" shall be inserted into the appropriate location. Each copy of the proposal shall include the legal name of the Offeror and shall indicate whether the Offeror is a sole proprietor, partnership, corporation, limited liability company, or other legal entity. Each copy of the proposal shall be signed by the person or persons legally authorized to bind the Offeror. A proposal by a corporation or limited liability company shall name the state of incorporation or organization of the Offeror, and shall include reasonable evidence of the authority of the person signing the proposal to bind the corporation or limited liability Company.*

Contractor shall refer to Weather Data Sheet for information related to how District addresses weather days, as defined in Attachment "O".

Offeror shall execute and deliver to Owner with its Proposal, each of the following:

a. ***Contractor's Qualification Statement (AIA Form A305)****: Executed counterpart of the Contractor's Qualification Statement, a copy of which is attached to the Proposal Form as* ***Schedule 1****.*

b. ***Subcontractors and Suppliers****: A list of the subcontractors and material suppliers which the Offeror proposes to use for the Work, in the form attached to the Proposal Form as* ***Schedule 2****. All spaces on the attached Schedule shall be completed, and should any particular item or trade not apply, the Offeror shall mark "not applicable" in the appropriate space. Each Offeror is advised that all persons, firm, corporations or other parties to whom the Offeror proposes to award a subcontract hereunder must be acceptable to the Owner. The Schedule described herein is in addition to, and not in limitation of, the requirements for submission and approval of subcontractors and suppliers contained in Article 5 of the General Conditions. The Owner may require evidence of a subcontractor's bondability if the subcontractor's contract exceeds $100,000.00 in the aggregate.*

c. ***Felony Conviction Notification****: Executed counterpart of the Felony Conviction Notification, in the form attached to the Proposal Form as* ***Schedule 3****.*

d. ***Hold Harmless Agreement****: Executed counterpart of the Hold Harmless Agreement, in the form attached to the Proposal Form as* ***Schedule 4****.*

e. ***Financial Statements****: Current financial statements of the Offeror, as of the most recent calendar (or fiscal) year ended and current monthly income and expense statements for the fiscal year to date, certified by the Offeror to be true and correct, to be attached to the Proposal Form as* ***Schedule 5****.*

f. ***Insurance and Bonding Certification:*** *A certification by the President or a Vice President of the Offeror, representing to Owner that the Offeror has the capability to satisfy the insurance and bonding requirements set out in the "Proposal Documents", in the form attached to the Proposal Form as* ***Schedule 6****.*

g. ***Conflict of Interest Questionnaire:*** *Completed and executed Conflict of Interest Questionnaire, in the form attached to the Proposal Form as* ***Schedule 7****.*

h. ***Proposal Security****: A certified check or proposal bond issued by surety authorized to issue surety bonds in the State of Texas in the amount equal to five percent (5%) of the Base Proposal, plus all additive alternatives, if applicable, to be attached to the Proposal Form.*

Items (a) – (h) above, as well as Exhibits A (Relevant Experience), B (Project Management Ability), and C (Past Performance), are required by the Owner to adequately evaluate the Offeror's qualifications. Failure of the Offeror to deliver any such items with its proposal shall constitute a basis for rejection of the proposal by the Owner*.*

Only one executed original and one copy of executed original of the Proposal Form, Schedule 2, and the Proposal Security need be submitted to Owner. All other Schedules (1, 3, 4, 5, 6 and 7) and Exhibits A (Relevant Experience), B (Project Management Ability), and C (Past Performance), shall be submitted in a binder with section dividers.

PROPOSAL SELECTION CRITERIA*: Award of the Contract resulting from this solicitation shall be under the selection process described herein. A committee appointed by Owner will evaluate Proposals submitted in response to this solicitation. The five (5) divisions of selection criteria ("Divisions") are as follows:*

(A) Relevant Experience
(B) Project Management Ability
(C) Past Performance
(D) Subcontractor and Supplier Support Capability
(E) Price Proposal

Each of the Divisions has been assigned an appropriate weight by the Owner, as set forth below. Following an analysis and evaluation of the proposals, ranking of the Offerors will be made based upon the selection criteria. In the event of a tie in the rankings, Owner shall break the tie based upon Owner's determination of which proposal will provide the best value to Owner. Subjective judgment on the part of the Owner is implicit in the criteria selection process. The selection process permits placing technical considerations above total price. Therefore, the Owner reserves the right to award to other than the lowest proposed price. Once the Offerors have been ranked, the Owner will begin contract negotiations with the first ranked Offeror. If the Owner is unable to come to terms with the first ranked Offeror, discussions will be terminated and the Owner will proceed to the next ranked Offeror and repeat the process until a contract agreement is reached or all proposals are rejected.

Any Proposal may be considered unacceptable if the committee determines it fails to provide adequate information in technical and price proposals as specified in this Instruction to Offerors.

Within 45 days after the opening of the proposals, the Owner shall evaluate and rank sequentially each proposal submitted in relation to the selection criteria. In accordance with relevant statutory provisions, Owner reserves the right not to make the evaluations or rankings public until seven days after the Contract has been fully executed by the Owner and the selected contractor. There shall be no right to protest or appeal the rankings prior to the time that the Contract is executed; however, after the rankings are made public, the Owner shall receive any comments, in writing, from any Offeror not selected.

The proposal review committee may include, but is not be limited to, the Assistant Superintendent for Facilities and Operations, the Executive Director of Construction & Engineering, the Director of Facilities Construction and/or the Director of Engineering, the Director of Purchasing, and the Consultant team.

The Owner will evaluate the proposals submitted based upon the selection criteria more fully described below:

(A) RELEVANT EXPERIENCE – (20 Points) - Attach to the Proposal Form as <u>Exhibit A</u>

1. Experience (5 Points) – Experience as a general contractor under company's current legal name with specific experience in facilities construction projects of the same or similar type, size, nature and class as the Project being proposed, including work performed in connection with a facility which is occupied and in use during construction, if applicable. Consideration will be given to the number of years of experience, which an Offeror has as defined in Schedule 1 – Contractor's Qualification Statement.

2. Representative Projects (10 Points) – Representative projects (dollar value and/or scope/size) must be submitted as references to include the project name, Consultant of record, cost of the project, scope, year of completion, and the Owner's contact person to include phone number. Consideration will only be given to projects which were occupied or substantially completed within the last ten (10) years. Educational Facilities Projects will receive greater consideration.

3. Project Support (5 Points):

(a) Provide evidence of sufficient resources necessary to manage, staff, and successfully perform the work contemplated under this proposal, to include, but not limited to: a brief profile of the Offeror, including its principal line of business, the year founded, number and location of offices, and the number of employees. Identify any condition (bankruptcy, pending merger, pending litigation, planned office closures or others) that may enhance or impede the Offeror's ability to perform the services. Include a discussion of the methods, tools, procedures, and additional resources (example: Project Executive, Safety Officer, Project Engineer, Project Administrator, etc.) used to manage the work contemplated under this proposal and shall include the total number of calendar days that are required to complete the scope of the work. Timely completion of the contract is important to the Owner and will be a factor in the consideration of the award of the contract. List additional project support available that would be utilized on this project to ensure timely and quality completion.

(b) List/identify construction equipment, supplies, and related resources owned by the Offeror available to perform work proposed in this project.

(c) Clearly identify scheduling approach/technique and software tools utilized to establish and maintain project schedule.

(B) PROJECT MANAGEMENT ABILITY – (10 Points) - Attach to the Proposal Form as <u>Exhibit B</u>.

1. Project Management Team:

(a) & (b) Project Manager's and Project Superintendent's points will be distributed based on years of experience in the assigned role per the evaluation matrix. Assistant Superintendent years of experience will be counted as half credit for the Superintendent. Resumes are to include but are not limited to: key projects in the role assigned with dollar amounts and year completed, experience with other organizations, and description of duties performed in current role. If an individual has served in different roles within the organization, then those roles and the number of years in those roles will also need to be listed.

(C) PAST PERFORMANCE – (15 Points) - Attach to the Proposal Form as <u>Exhibit C</u>.

The contractor shall provide evidence in the form of a narrative description, reference letters, bar charts and any other form of additional information that attests to their past performance with other school districts and/or clients and addresses at a minimum items (I) through (vii) listed below. Past performance will be considered in the evaluation process, including but not limited to, the following:

- *(i) Timely Completion – Ability of Contractor to remain on schedule.*
- *(ii) Cooperation with Owner(s), Owner's Representative, and Consultants.*
- *(iii) Coordination of Trades – Proper and timely coordination of all trades and support personnel in completing the project.*
- *(iv) Quality of Workmanship – Consistent demonstration of commitment to excellence in workmanship.*
- *(v) Warranty Responsiveness – Minimum number of warranty item call backs during the warranty phase, and warranty responsiveness.*
- *(vi) Punch List Length & Completion – Minimal number of major deficiencies on the substantial completion punch list and timely completion of punch list items.*
- *(vii) Cooperation on Changes in Cost, Time, and Scope.*

If Offeror does not have previous construction experience with the Northside Independent School District, consideration will be given to references from other representative projects and/or Owners.

(D) SUBCONTRACTOR AND SUPPLIER SUPPORT CAPABILITY – (20 Points)

The Offeror shall submit a schedule of proposed subcontractors and suppliers for this Project as defined in Schedule 2. The Offeror should be capable of submitting resumes and references for each subcontractor listed, if requested by Owner.

(E) PRICE PROPOSALS – (35 Points)

The Owner will consider the total contract cost as part of its evaluation. The Owner shall have the right to accept alternates in any order or combination unless otherwise specifically provided in the Proposal Documents.

The Offeror submitting the lowest proposed amount shall receive the highest number of points in this category, and the Offeror submitting the highest proposed amount shall receive the lowest number of points awarded in this category.

***<u>MODIFICATIONS AND PROPOSAL WITHDRAWAL</u>**: A proposal may not be modified, withdrawn or canceled by an Offeror for a period of forty-five (45) days after the last date specified for receipt of proposals. Prior to the last date specified for receipt of proposals, a proposal may be modified or withdrawn by notice to the Owner's Director of Purchasing at the place designated for receipt of proposals. Such notice shall be in writing and executed by the Offeror. Written confirmation executed by the Offeror shall be mailed and postmarked on or before the stated time set for receipt of proposals. Any modification*

shall be worded so as not to reveal the amount of the original proposal. Any proposal withdrawn may be resubmitted within the time designated for the receipt of proposals.

ACCEPTANCE AND/OR REJECTION OF PROPOSALS: *The Owner may request from Offeror a written interpretation of any term or statement in the proposal that is or appears unclear or subject to more than one interpretation, and may act upon such written interpretation. Conditional proposals will not be accepted. The Owner shall have the right to reject all proposals, to reject a proposal not accompanied by the required security, to reject a proposal which is in any way incomplete, irregular or nonconforming, or to reject a proposal which may otherwise be legally rejected for any reason. To the extent allowed by law, the Owner may waive any formality in any proposal.*

Unless the Owner rejects all proposals, the Owner intends to award the Contract to the Offeror that offers the best value to the Owner based on the listed selection criteria. If the Owner is unable to reach a contract agreement with the selected Offeror, the Owner shall terminate further discussions and proceed to the next Offeror in the order of the selection ranking until a contract agreement is reached or all proposals are rejected. Time is of the essence, and the award of the contract to the successful Offeror is expressly conditioned upon (i) the Offeror's execution and delivery of the Contract, and delivery of all required payment and performance bonds and evidence of insurance, within ten (10) calendar days after the successful Offeror is notified of the award of its proposal, (ii) submission of notarized and completed House Bill Form 1295 in an original form and a copy, (refer to Attachment M – House Bill 1295 at www.ethics.state.tx.us/File) and (iii) the Offeror's timely fulfillment of any and all other preconditions expressly set forth in the Contract Documents. Should the Offeror fail to timely execute and deliver the Contract, required bonds, evidence of insurance, or fail to timely fulfill any other such preconditions, the Owner may, at its option and discretion, without releasing, impairing or affecting its right to receive the security as damages for such failure, rescind the proposed award and thereafter negotiate with and award the Contract to the next ranked Offeror, or may reject all proposals. There will be no contractual obligation on the part of the Owner to any Offeror, nor will any Offeror have any property interest or other right in the Contract or Work being proposed, nor may the Offeror have any reasonable expectation of being awarded the Contract, unless and until the Contract is unconditionally executed and delivered by all parties, and all conditions to be fulfilled by the Offeror have either been so fulfilled by the Offeror or waived in writing by the Owner.

Each Offeror by submission of a proposal waives any claims it has or may have against the Owner, the Consultant, sub-consultants and their employees, and any trustees, officers, and employees of Owner, connected with or arising out of the proposal administration, proposal evaluation, proposal ranking, proposal recommendation, the award of the Contract, and the rejection of any proposals.

INSURANCE & PAYMENT & PERFORMANCE BONDS: *The Offeror shall include evidence of its ability to obtain the required bonds and insurance, and the ability to cover operating expenses. Such evidence includes pertinent bank, bonding company, and creditor references, with account numbers, points of contact, and telephone numbers. Each Offeror shall be capable of furnishing payment and performance bonds, each in the amount of 100% of the contract sum. The Surety Company providing the bonds must be approved for the amount of the bonds by applicable laws of the State of Texas and by Owner and licensed to do business in the State of Texas. The Offeror shall be otherwise qualified and eligible to receive an award and perform the contractor's obligations in*

connection with the Project, under applicable laws and regulations. The successful Offeror shall deliver to the Owner, within the time specified in the Proposal Documents, evidence of insurance and original payment and performance bonds, all in accordance with the requirements set forth in the "Proposal Documents".

TRENCH EXCAVATION PROTECTION: *Specific reference is hereby made to those certain sections, divisions, and parts of the Specifications which contain requirements for trench excavation protection with respect to the Work. Each Offeror should specifically note the fact that certain requirements with respect to such trench excavation protection must be satisfied prior to award of the Contract.*

PREVAILING WAGE RATES: *As set forth in the Contract Documents (refer to Appendix A), each Offeror is advised that, if awarded the Contract, the Offeror must comply with the requirements of V.T.C.A, Government Code §2258.001 et seq., with respect to the Work, and in this regard shall pay to and cause all of its subcontractors to pay not less than the general prevailing rate of per diem wages and the prevailing rate for legal holidays and overtime work, as ascertained by the Owner.*

PROJECT: Paving Upgrades at Clarence Galm ES
(RFCSP) # 2024-019
DATE: 03/01/24
EVALUATOR: J. Villarreal P.E., E. Jimenez, T. Ussery, P. Mathis P.E.

SMALL PROJECTS CONTRACTORS

			A a	B b	C c	D d	E e	F f	G g
A. Relevant Experience		(20 Pts.)							
1 Experience									
a.	Less than 3 years	1							
b.	>3 to 5 years	3							
c.	>5 to 8 years	4							
d.	≥9 years	5							
2 Representative Projects (Substantially Completed in the Last 10 Years)									
a.	Maximum of 2 points per representative project	10							
3 Project Support									
a.	Documented Sufficient Resources	3							
b.	Available Company Owned Equipment	1							
c.	Scheduling Techniques	1							
	TOTAL		**0**	**0**	**0**	**0**	**0**	**0**	**0**
B. Project Management Ability		(10 Pts.)							
1 Project Management Team									
a. Project Manager's Experience									
1	<3 years and No Listing	0							
2	<3 years and 1 to 2 Projects	1							
3	≥3 years and 3 to 5 Projects	2							
4	≥5 years	3							
5	≥8 years	4							
6	≥10 years	5							
b. Project Superintendent's Experience									
1	<3 years and No Listing	0							
2	<3 years and 1 to 2 Projects	1							
3	≥3 years and 3 to 5 Projects	2							
4	≥5 years	3							
5	≥8 years	4							
6	≥10 years	5							
	TOTAL		**0**	**0**	**0**	**0**	**0**	**0**	**0**
C. Past Performance		(15 Pts.)							
1	Timely Completion	3							
2	Cooperation with Owner(s), Owner's Representative, and Consultants	3							
3	Coordination of Trades	3							
4	Quality of Workmanship	2							
5	Warranty Responsiveness	2							
6	Punch List Length & Completion	1							
7	Cooperation on Changes in Cost, Time & Scope	1							
	TOTAL		**0**	**0**	**0**	**0**	**0**	**0**	**0**
D. Subcontractors & Suppliers		(20 Pts.)							
1 List of Subs & Suppliers									
a.	Site Work	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
b.	Asphalt Paving	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00
c.	Concrete Paving	8	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d.	Striping/Signage	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TOTAL		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
E. Price Proposal-Based on Total Bid		(35 Pts.)							
1	Lowest Proposal	35							
2	>0 to 10% above low bid	32 to 34							
3	>11 to 20% above low bid	29 to 31							
4	>21 to 30% above low bid	26 to 28							
5	>31 to 40% above low bid	20 to 25							
6	>40% above low bid	0 to 19							
	TOTAL		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
SUBTOTAL (A,B,D & E) (WITHOUT C. Past Performance)			**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
GRAND TOTAL			**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

PROPOSAL FORM
(Competitive Sealed Proposal)

PROPOSAL OF:

_____

(Name of Offeror)

TO: Director of Purchasing

FOR: Paving Upgrades at Clarence Galm ES

PROPOSAL # RFCSP No. 2024-019

Attention Owner:

The Offeror named herein (hereinafter called "Offeror"), in compliance with the Invitation to Offerors and Instructions to Offerors for the Paving Upgrades at Clarence Galm ES *("Project") for the Northside Independent School District, San Antonio, Texas ("Owner"), having inspected the Project site and carefully examined the Project Drawings, Specifications, Addenda Nos. (List all addenda) _____, and all other Contract Documents (as such term is defined in the Instructions to Offerors), hereby offers to enter into a contract to furnish all labor, materials, tools, equipment, transportation, machinery, supplies, insurance, permits, (per owners special conditions chapter 3, section 3.2) taxes and services necessary to complete the Work in accordance with the Contract Documents, within the time set forth herein, and at the prices stated herein. The Offeror fully understands the intent and purpose of the Contract Documents and the conditions of offer as set forth herein and in the Invitation to Offerors and the Instructions to Offerors. The Offeror hereby covenants and agrees that claims for additional compensation or extensions of time because of Offerors failure to familiarize itself with the Contract Documents or any condition at the Project site, which might affect the Work, will not be allowed.*

Base Proposal: The Offeror agrees to execute all of the Work described in the Drawings, Specifications and other Contract Documents, including Owner Contingency and Allowances as defined in "Specifications", for the sum of _____ _____and_____/100 DOLLARS ($_____). In case of a difference between written words and numbers in this Proposal Form, the amount stated in written words shall govern. All unused Owner Contingency and Allowances will be returned back to Owner.

1. *Alternate No. One (1) [A]: Combination of pavement replacement and seal coating of existing pavement along the student pickup/drop-off lane. Includes replacement of existing curb along Saxonhill Drive. Addition of concrete channels and sidewalk drains along Saxonhill Drive. Addition of new sidewalk from bicycle racks to the main drive sidewalk along Stanton Drive. Installation of two sidewalk drains that will drain into Saxonhill Drive. Add the sum of _____ and _____/100 DOLLARS ($_____) to the Base Proposal.*

Alternate No. Two (1) [B]: Blacktop area and basketball courts behind gym to be replaced in combination with asphalt pavement replacement. Seal coating of existing asphalt. Striping of blacktop area and basketball courts. Regrading of existing channel as shown in sheets C1.3, C2.3, and C3.3. Addition of sidewalk drains and cleanout of existing channels along Stanton Drive. Add the sum of _____ and _____ _____/100 DOLLARS ($_____) to the Base Proposal.

Alternate No. Three (1) [C]: Addition of lighting fixture upgrades and repainting of existing light poles (8) located throughout the site. Add the sum of _____ _____ and _____/100 DOLLARS ($_____) to the Base Proposal.

[Alternate Number]	*[Description - Added by Consultant]*	*[Add or Deduct]*	*[Cost]*
#1	*Visitor Parking & Sidewalk*	*Add*	_____
#2	*Surface Courts / Drainage Improvements*	*Add*	_____
#3	*Lighting Upgrades*	*Add*	_____

2. Unit Prices: *The Offeror agrees that the Base Proposal may be adjusted by the amounts indicated below for each unit price:*

[Number]	*[Description]*	*[Units]*	*[Cost $/Unit]*
1	*DEMOLISH AND HAUL OFF / DISPOSE OF PROPERLY (1) OF CONCRETE SIDEWALK (SF)*	*S.F.*	_____
2	*DEMOLISH AND HAUL OFF / DISPOSE OF PROPERLY (1) OF CONCRETE CURB (LF)*	*L.F.*	_____
3	*DEMOLISH AND HAUL OFF / DISPOSE OF PROPERLY (1) OF SIDEWALK DRAIN (LS)*	*L.S.*	_____
4	*DEMOLISH AND HAUL OFF / DISPOSE OF PROPERLY (1) OF CONCRETE APPROACH (SF)*	*S.F.*	_____
5	*DEMOLISH AND HAUL OFF / DISPOSE OF PROPERLY (1) OF ASPHALT PAVEMENT (SY)*	*S.Y.*	_____
6	*DEMOLISH AND HAUL OFF / DISPOSE OF PROPERLY (1) OF ASPHALT MILLING (2") (SY)*	*S.Y.*	_____
7	*DEMOLISH AND HAUL OFF / DISPOSE OF PROPERLY (1) OF CHANNEL EXCAVATION (CY)*	*C.Y.*	_____
8	*FURNISH AND INSTALL 6" SUBGRADE*	*S.Y.*	_____
9	*FURNISH & INSTALL (1) 8" FLEXIBLE BASE (SY)*	*S.Y.*	_____
10	*FURNISH & INSTALL (1) 2" TYPE "D" HOT MIX (SY)*	*S.Y.*	_____
11	*FURNISH & INSTALL (1) 6" CONCRETE PAVEMENT (SY) SEE DETAIL #2 ON SHEET C3.5*	*S.Y.*	_____
12	*FURNISH AND INSTALL 5" CONCRETE PAVEMENT (SY) SEE DETAIL #2 ON SHEET C3.5*	*S.Y.*	_____
13	*FURNISH & INSTALL (1) COMMERCIAL DRIVEWAY (SY) SEE DETAILS ON SHEET C3.8*	*S.Y.*	_____
14	*FURNISH & INSTALL (1) CURB RAMP (EA) SEE DETAIL #12 ON SHEET C3.5*	*EA.*	_____

15	*FURNISH & INSTALL (1) CONCRETE SIDEWALK (SY) SEE DETAIL #6 ON SHEET C3.5*	*S.Y.*	_____
16	*FURNISH & INSTALL (1) CONCRETE CURB (LF) SEE DETAIL #3 ON SHEET C3.6*	*L.F.*	_____
17	*FURNISH AND INSTALL 2" HMAC PAVEMENT FOR DRIVE LANES SEE DETAIL #1 ON SHEET C3.5*	*S.Y.*	_____
18	*FURNISH AND INSTALL 2" HMAC PAVEMENT FOR PARKING SPACES SEE DETAIL #1 ON SHEET C3.5*	*S.Y.*	_____
19	*FURNISH & INSTALL (1) CONCRETE SIDEWALK DRAIN (EA) SEE DETAILS ON SHEET C3.6*	*EA.*	_____
20	*FURNISH & INSTALL (1) CONCRETE FLUME (SY) SEE DETAILS ON SHEET C3.4*	*L.F.*	_____
21	*FURNISH & INSTALL (1) CONCRETE RIP RAP (4" THICK) (SY) SEE DETAILS ON SHEET C3.4*	*S.Y.*	_____
22	*FURNISH REMOVAL AND REPLACEMENT (1) OF FIRE LANE MARKING (LF) SEE DETAIL #10 ON C3.5*	*L.F.*	_____
23	*FURNISH & INSTALL (1) PARKING LOT STRIPING (LF) SEE DETAILS ON SHEET C3.9*	*L.F.*	_____
24	*FURNISH & INSTALL (1) TOPSOIL (CY)*	*C.Y.*	_____
25	*FURNISH & INSTALL (1) SOD (SY)*	*S.Y.*	_____
26	*FURNISH & INSTALL (1) RIP-RAP ROCK (CY)*	*C.Y.*	_____
27	*FURNISH & INSTALL (1) TREE PROTECTION FENCE (LF)*	*L.F.*	_____
28	*FURNISH & INSTALL (1) SILF FENCING (LF)*	*L.F.*	_____
29	*FURNISH & INSTALL (1) CONSTRUCTION ENTRANCE / EXIT (SY)*	*S.Y.*	_____
30	*FURNISH & INSTALL (1) CONCRETE WASHOUT PIT (EA)*	*EA.*	_____
31	*FURNISH & INSTALL (1) GRAVEL FILTER BAGS (LF)*	*L.F.*	_____
32	*FURNISH & INSALL (1) LED FLOOD LIGHTS WITH BRACKETS (UNIT PRICE WITH LABOR) (EA)*	*EA.*	_____

32	*FURNISH & INSTALL (1) LED FIXTURE AREA (SHOEBOX) WITH BRACKETS (UNIT PRICE WITH LABOR) (EA)*	*EA.*	_____
33	*FURNISH & ADJUST (1) MANHOLE TOP OF THE GREASE TRAP (LS)*	*L.S.*	_____

***3. Time for Completion**: If awarded the Contract, the Offeror agrees to commence the Work within 10 days after Notice to Proceed is given by the Owner, and assuming such notice of award is given on or before March 27, 2024, to achieve Substantial Completion of the Work on or before August 2, 2024.*

***4. Completion Date Alternate:** In the event the Offeror elects to provide a completion date / contract time **earlier** than the Base Proposal requirement, the Completion Date Alternate below should be completed in full. If no alternate date is provided by the Offeror, the Completion Date Alternate may be left blank. The Owner reserves the right to accept or reject any alternate in the order of the Owner's own choosing.*

The Offeror agrees to achieve Substantial Completion of the work on or before August 2, 2024, (128) consecutive calendar days to Substantially Complete the work from a notice of award given no later than March 27, 2024.

***5. Proposal Security**: Proposal security in the form of a certified check or proposal bond in the amount of five percent (5%) of the Base Proposal, plus all additive alternates, if applicable, is attached hereto, as a guaranty that the Offeror will unconditionally execute a satisfactory contract and furnish the payment and performance bonds, insurance and satisfy all other requirements for execution and delivery of the Contract Documents and commencement of the Work. NOTE: Please see the following link for information on Owner's Proposal Security Requirements:* https://www.nisd.net/district/purchasing/business-with-nisd

***6. Contractor's Personnel**: The Offeror agrees to employ the following individuals for the entire duration of the Work, as noted in A201 Article 3, at the positions indicated, and agrees not to remove them from the Work nor replace them with others except as otherwise allowed in the Contract Documents or approved in writing by Owner:*

Project Manager: _____

Project Superintendent: _____

***7. Representations**: By execution and submission of this Proposal, the Offeror hereby covenants, represents and warrants to Owner as follows:*

(a) The Offeror has prior experience on construction projects of the same or similar type, nature and class as the Work for the Project.

(b) The Offeror has read and understands the "Proposal Documents", including the Contract Documents, and this Proposal is made in accordance with the "Proposal Documents".

(c) The Offeror has carefully inspected the Project site, and that from the Offerors own investigation, the Offeror has satisfied itself as to the nature and location of the Work and the character, quality, quantities, materials and difficulties to be encountered; the kind and extent of equipment and other facilities needed for the performance of the Work; the general and local conditions and other items which may in any way affect the Work or its performance; and the Offeror has correlated the Offerors site observations with the requirements of the Contract Documents. The Offeror understands and accepts the difficulties and costs associated with the Work and the Project site and the potential delays, disruptions in work and costs associated therewith and has included such considerations in its construction schedule and the Proposal amount.

(d) To the fullest extent permitted by applicable law, the Offeror hereby waives any and all claims it has or may hereafter have against the Owner, the Consultant, and their respective trustees, officers, shareholders, directors, partners, agents, contractors, sub-consultants and employees arising out of or in connection with, or related to (i) the administration, evaluation, ranking, or recommendation of any proposals; (ii) any requirements under the "Proposal Documents" or the Contract Documents; (iii) acceptance or rejection of any proposals; and (iv) the award of the Contract. The Offeror knows and understands that the Offeror, by this waiver, is relinquishing current and future rights, benefits and advantages, and the Offeror hereby does so voluntarily and intentionally.

***8. Attached Schedules and Selection Criteria Exhibits**: The following Schedules and Exhibits are attached to this Proposal Form, and by this reference are expressly incorporated herein:*

Schedule 1 - Contractor's Qualification Statement (AIA Form A305)
Schedule 2 - Proposed Subcontractors and Suppliers
Schedule 3 - Felony Conviction Notification
Schedule 4 - Hold Harmless Agreement
Schedule 5 - Financial Statements
Schedule 6 - Insurance and Bonding Certification
Schedule 7 - Conflict of Interest Questionnaire

Exhibit A - Relevant Experience
Exhibit B - Project Management Ability
Exhibit C - Past Performance

OFFEROR

_____

By: _____
(Signature with Blue Ink required: Original Proposal Form required for consideration. Copies will not be accepted.)

*Name:*_____

*Title:*_____

SCHEDULE 1

CONTRACTOR'S QUALIFICATION STATEMENT (AIA FORM A305)

AIA® Document A305™ – 2020

Contractor's Qualification Statement

THE PARTIES SHOULD EXECUTE A SEPARATE CONFIDENTIALITY AGREEMENT IF THEY INTEND FOR ANY OF THE INFORMATION IN THIS A305-2020 TO BE HELD CONFIDENTIAL.

SUBMITTED BY:
(Organization name and address.)

SUBMITTED TO:
(Organization name and address.)

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

TYPE OF WORK TYPICALLY PERFORMED
(Indicate the type of work your organization typically performs, such as general contracting, construction manager as constructor services, HVAC contracting, electrical contracting, plumbing contracting, or other.)

THIS CONTRACTOR'S QUALIFICATION STATEMENT INCLUDES THE FOLLOWING:
(Check all that apply.)

- ☐ Exhibit A – General Information
- ☐ Exhibit B – Financial and Performance Information
- ☐ Exhibit C – Project-Specific Information
- ☐ Exhibit D – Past Project Experience
- ☐ Exhibit E – Past Project Experience (Continued)

CONTRACTOR CERTIFICATION
The undersigned certifies under oath that the information provided in this Contractor's Qualification Statement is true and sufficiently complete so as not to be misleading.

_____ _____
Organization's Authorized Representative Signature Date

_____
Printed Name and Title

NOTARY
State of:
County of:
Signed and sworn to before me this day of

_____
Notary Signature

My commission expires:

AIA® Document A305™ – 1986

Contractor's Qualification Statement

The Undersigned certifies under oath that the information provided herein is true and sufficiently complete so as not to be misleading.

SUBMITTED TO:

ADDRESS:

SUBMITTED BY:

NAME:

ADDRESS:

PRINCIPAL OFFICE:

- ☐ Corporation
- ☐ Partnership
- ☐ Individual
- ☐ Joint Venture
- ☐ Other

NAME OF PROJECT: *(If applicable)*

TYPE OF WORK: *(File a separate form for each Classification of Work.)*

- ☐ General Construction
- ☐ HVAC
- ☐ Electrical
- ☐ Plumbing
- ☐ Other: *(Specify)*

§ 1.0 ORGANIZATION

§ 1.1 How many years has your organization been in business as a Contractor?

This form is approved and recommended by the American Institute of Architects (AIA) and The Associated General Contractors of America (AGC) for use in evaluating the qualifications of contractors. No endorsement of the submitting party or verification of the information is made by AIA or AGC.

§ 1.2 How many years has your organization been in business under its present business name?

§ 1.2.1 Under what other or former names has your organization operated?

§ 1.3 If your organization is a corporation, answer the following:

§ 1.3.1 Date of incorporation:

§ 1.3.2 State of incorporation:

§ 1.3.3 President's name:

§ 1.3.4 Vice-president's name(s):

§ 1.3.5 Secretary's name:

§ 1.3.6 Treasurer's name:

§ 1.4 If your organization is a partnership, answer the following:

§ 1.4.1 Date of organization:

§ 1.4.2 Type of partnership, if applicable:

§ 1.4.3 Name(s) of general partner(s):

§ 1.5 If your organization is individually owned, answer the following:

§ 1.5.1 Date of organization:

§ 1.5.2 Name of owner:

§ 1.6 If the form of your organization is other than those listed above, describe it and name the principals:

§ 2.0 LICENSING

§ 2.1 List jurisdictions and trade categories in which your organization is legally qualified to do business, and indicate registration or license numbers, if applicable.

§ 2.2 List jurisdictions in which your organization's partnership or trade name is filed.

§ 3.0 EXPERIENCE

§ 3.1 List the categories of work that your organization normally performs with its own forces.

§ 3.2 Claims and Suits

(If the answer to any of the questions below is yes, attach details.)

§ 3.2.1 Has your organization ever failed to complete any work awarded to it?

§ 3.2.2 Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against your organization or its officers?

§ 3.2.3 Has your organization filed any law suits or requested arbitration with regard to construction contracts within the last five years?

§ 3.3 Within the last five years, has any officer or principal of your organization ever been an officer or principal of another organization when it failed to complete a construction contract?
(If the answer is yes, attach details.)

§ 3.4 On a separate sheet, list major construction projects your organization has in progress, giving the name of project, owner, architect, contract amount, percent complete and scheduled completion date.

§ 3.4.1 State total worth of work in progress and under contract:

§ 3.5 On a separate sheet, list the major projects your organization has completed in the past five years, giving the name of project, owner, architect, contract amount, date of completion and percentage of the cost of the work performed with your own forces.

§ 3.5.1 State average annual amount of construction work performed during the past five years:

§ 3.6 On a separate sheet, list the construction experience and present commitments of the key individuals of your organization.

§ 4.0 REFERENCES

§ 4.1 Trade references:

§ 4.2 Bank references:

§ 4.3 Surety

§ 4.3.1 Name of bonding company:

§ 4.3.2 Name and address of agent:

§ 5.0 FINANCING

§ 5.1 Financial Statement

§ 5.1.1 Attach a financial statement, preferably audited, including your organization's latest balance sheet and income statement showing the following items:

.1 Current Assets (e.g., cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory and prepaid expenses);

.2 Net Fixed Assets;

.3 Other Assets;

.4 Current Liabilities (e.g., accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries and accrued payroll taxes); and

.5 Other Liabilities (e.g., capital, capital stock, authorized and outstanding shares par values, earned surplus and retained earnings).

§ 5.1.2 Name and address of firm preparing attached financial statement, and date thereof:

§ 5.1.3 Is the attached financial statement for the identical organization named on page one?

§ 5.1.4 If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g., parent-subsidiary).

§ 5.2 Will the organization whose financial statement is attached act as guarantor of the contract for construction?

§ 6.0 SIGNATURE

§ 6.1 Dated this day of 20

Name of organization:

By:

Title:

§ 6.2

M being duly sworn deposes and says that the information provided herein is true and sufficiently complete so as not to be misleading.

Subscribed and sworn before me this day of 20

Notary Public:

My commission expires:

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.

AIA® Document A305™ – 2020 Exhibit A

General Information

This Exhibit is part of the Contractor's Qualification Statement, submitted by
and dated the day of in the year
(In words, indicate day, month and year.)

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

§ A.1 ORGANIZATION

§ A.1.1 Name and Location

§ A.1.1.1 Identify the full legal name of your organization.

§ A.1.1.2 List all other names under which your organization currently does business and, for each name, identify jurisdictions in which it is registered to do business under that trade name.

§ A.1.1.3 List all prior names under which your organization has operated and, for each name, indicate the date range and jurisdiction in which it was used.

§ A.1.1.4 Identify the address of your organization's principal place of business and list all office locations out of which your organization conducts business. If your organization has multiple offices, you may attach an exhibit or refer to a website.

§ A.1.2 Legal Status

§ A.1.2.1 Identify the legal status under which your organization does business, such as sole proprietorship, partnership, corporation, limited liability corporation, joint venture, or other.

.1 If your organization is a corporation, identify the state in which it is incorporated, the date of incorporation, and its four highest-ranking corporate officers and their titles, as applicable.

.2 If your organization is a partnership, identify its partners and its date of organization.

.3 If your organization is individually owned, identify its owner and date of organization.

.4 If the form of your organization is other than those listed above, describe it and identify its individual leaders:

§ A.1.2.2 Does your organization own, in whole or in part, any other construction-related businesses? If so, identify and describe those businesses and specify percentage of ownership.

§ A.1.3 Other Information

§ A.1.3.1 How many years has your organization been in business?

§ A.1.3.2 How many full-time employees work for your organization?

§ A.1.3.3 List your North American Industry Classification System (NAICS) codes and titles. Specify which is your primary NAICS code.

§ A.1.3.4 Indicate whether your organization is certified as a governmentally recognized special business class, such as a minority business enterprise, woman business enterprise, service disabled veteran owned small business, woman owned small business, small business in a HUBZone, or a small disadvantaged business in the 8(a) Business Development Program. For each, identify the certifying authority and indicate jurisdictions to which such certification applies.

§ A.2 EXPERIENCE

§ A.2.1 Complete Exhibit D to describe up to four projects, either completed or in progress, that are representative of your organization's experience and capabilities.

§ A.2.2 State your organization's total dollar value of work currently under contract.

§ A.2.3 Of the amount stated in Section A.2.2, state the dollar value of work that remains to be completed:

§ A.2.4 State your organization's average annual dollar value of construction work performed during the last five years.

§ A.3 CAPABILITIES

§ A.3.1 List the categories of work that your organization typically self-performs.

§ A.3.2 Identify qualities, accreditations, services, skills, or personnel that you believe differentiate your organization from others.

§ A.3.3 Does your organization provide design collaboration or pre-construction services? If so, describe those services.

§ A.3.4 Does your organization use building information modeling (BIM)? If so, describe how your organization uses BIM and identify BIM software that your organization regularly uses.

§ A.3.5 Does your organization use a project management information system? If so, identify that system.

§ A.4 REFERENCES

§ A.4.1 Identify three client references:
(Insert name, organization, and contact information)

§ A.4.2 Identify three architect references:
(Insert name, organization, and contact information)

§ A.4.3 Identify one bank reference:
(Insert name, organization, and contact information)

§ A.4.4 Identify three subcontractor or other trade references:
(Insert name, organization, and contact information)

AIA® Document A305™ – 2020 Exhibit B

Financial and Performance Information

This Exhibit is part of the Contractor's Qualification Statement, submitted by
and dated the day of in the year
(In words, indicate day, month and year.)

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

§ B.1 FINANCIAL

§ B.1.1 Federal tax identification number:

§ B.1.2 Attach financial statements for the last three years prepared in accordance with Generally Accepted Accounting Principles, including your organization's latest balance sheet and income statement. Also, indicate the name and contact information of the firm that prepared each financial statement.

§ B.1.3 Has your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management, been the subject of any bankruptcy proceeding within the last ten years?

§ B.1.4 Identify your organization's preferred credit rating agency and identification information.
(Identify rating agency, such as Dun and Bradstreet or Equifax, and insert your organization's identification number or other method of searching your organization's credit rating with such agency.)

§ B.2 DISPUTES AND DISCIPLINARY ACTIONS

§ B.2.1 Are there any pending or outstanding judgments, arbitration proceedings, bond claims, or lawsuits against your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management, or any of the individuals listed in Exhibit A, Section 1.2, in which the amount in dispute is more than $75,000?
(If the answer is yes, provide an explanation.)

§ B.2.2 In the last five years, has your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management:
(If the answer to any of the questions below is yes, provide an explanation.)

.1 failed to complete work awarded to it?

.2 been terminated for any reason except for an owners' convenience?

.3 had any judgments, settlements, or awards pertaining to a construction project in which your organization was responsible for more than $75,000?

.4 filed any lawsuits or requested arbitration regarding a construction project?

§ B.2.3 In the last five years, has your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management; or any of the individuals listed in Exhibit A Section 1.2:
(If the answer to any of the questions below is yes, provide an explanation.)

.1 been convicted of, or indicted for, a business-related crime?

.2 had any business or professional license subjected to disciplinary action?

.3 been penalized or fined by a state or federal environmental agency?

AIA® Document A305™ – 2020 Exhibit C

Project Specific Information

This Exhibit is part of the Contractor's Qualification Statement, submitted by
and dated the day of in the year
(In words, indicate day, month and year.)

PROJECT:
(Name and location or address.)

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

CONTRACTOR'S PROJECT OFFICE:
(Identify the office out of which the contractor proposes to perform the work for the Project.)

TYPE OF WORK SOUGHT
(Indicate the type of work you are seeking for this Project, such as general contracting, construction manager as constructor, design-build, HVAC subcontracting, electrical subcontracting, plumbing subcontracting, etc.)

CONFLICT OF INTEREST
Describe any conflict of interest your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management, or any of the individuals listed in Exhibit A Section 1.2, may have regarding this Project.

§ C.1 PERFORMANCE OF THE WORK
§ C.1.1 When was the Contractor's Project Office established?

§ C.1.2 How many full-time field and office staff are respectively employed at the Contractor's Project Office?

§ C.1.3 List the business license and contractor license or registration numbers for the Contractor's Project Office that pertain to the Project.

§ C.1.4 Identify key personnel from your organization who will be meaningfully involved with work on this Project and indicate (1) their position on the Project team, (2) their office location, (3) their expertise and experience, and (4) projects similar to the Project on which they have worked.

§ C.1.5 Identify portions of work that you intend to self-perform on this Project.

§ C.1.6 To the extent known, list the subcontractors you intend to use for major portions of work on the Project.

§ C.2 EXPERIENCE RELATED TO THE PROJECT

§ C.2.1 Complete Exhibit D to describe up to four projects performed by the Contractor's Project Office, either completed or in progress, that are relevant to this Project, such as projects in a similar geographic area or of similar project type. If you have already completed Exhibit D, but want to provide further examples of projects that are relevant to this Project, you may complete Exhibit E.

§ C.2.2 State the total dollar value of work currently under contract at the Contractor's Project Office:

§ C.2.3 Of the amount stated in Section C.2.2, state the dollar value of work that remains to be completed:

§ C.2.4 State the average annual dollar value of construction work performed by the Contractor's Project Office during the last five years.

§ C.2.5 List the total number of projects the Contractor's Project Office has completed in the last five years and state the dollar value of the largest contract the Contractor's Project Office has completed during that time.

§ C.3 SAFETY PROGRAM AND RECORD

§ C.3.1 Does the Contractor's Project Office have a written safety program?

§ C.3.2 List all safety-related citations and penalties the Contractor's Project Office has received in the last three years.

§ C.3.3 Attach the Contractor's Project Office's OSHA 300a Summary of Work-Related Injuries and Illnesses form for the last three years.

§ C.3.4 Attach a copy of your insurance agent's verification letter for your organization's current workers' compensation experience modification rate and rates for the last three years.

§ C.4 INSURANCE

§ C.4.1 Attach current certificates of insurance for your commercial general liability policy, umbrella insurance policy, and professional liability insurance policy, if any. Identify deductibles or self-insured retentions for your commercial general liability policy.

§ C.4.2 If requested, will your organization be able to provide property insurance for the Project written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis?

§ C.4.3 Does your commercial general liability policy contain any exclusions or restrictions of coverage that are prohibited in AIA Document A101-2017, Exhibit A, Insurance A.3.2.2.3? If so, identify.

§ C.5 SURETY

§ C.5.1 If requested, will your organization be able to provide a performance and payment bond for this Project?

§ C.5.2 Surety company name:

§ C.5.3 Surety agent name and contact information:

§ C.5.4 Total bonding capacity:

§ C.5.5 Available bonding capacity as of the date of this qualification statement:

AIA® Document A305™ – 2020 Exhibit D

Contractor's Past Project Experience

	1	2	3	4
PROJECT NAME				
PROJECT LOCATION				
PROJECT TYPE				
OWNER				
ARCHITECT				
CONTRACTOR'S PROJECT EXECUTIVE				
KEY PERSONNEL (include titles)				
PROJECT DETAILS	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work
PROJECT DELIVERY METHOD	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:
SUSTAINABILITY CERTIFICATIONS				

AIA® Document A305™ – 2020 Exhibit E

Contractor's Past Project Experience, Continued

	1	2	3	4
PROJECT NAME				
PROJECT LOCATION				
PROJECT TYPE				
OWNER				
ARCHITECT				
CONTRACTOR'S PROJECT EXECUTIVE				
KEY PERSONNEL (include titles)				
PROJECT DETAILS	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work
PROJECT DELIVERY METHOD	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:
SUSTAINABILITY CERTIFICATIONS				

SCHEDULE 2
PROPOSED SUBCONTRACTORS AND SUPPLIERS

Proposed Subcontractors: Subject to approval by the Owner and Consultant, the Bidder agrees to employ the following named Subcontractors for the following trades (insert only one [1] legal subcontractor name for each item of work, place of business, business address, and phone number, or if the item of work is not to be subcontracted, the Bidder shall insert the Bidder's own legal name; insertion of more than one name will result in a deduction of points or disqualification during the evaluation and ranking process). All names listed below shall be the subcontractor installing or performing the work unless otherwise specified:

ITEM OF WORK	PROPOSED SUBCONTRACTOR	PLACE OF BUSINESS	ADDRESS & TELEPHONE

*"[Consultant to **Verify** Categories per Project and **Notify NISD** if form is **Modified**]"*

Site Work _____

Asphalt Paving _____

Concrete Paving _____

Striping/Signage _____

SCHEDULE 3
FELONY CONVICTION NOTIFICATION

State of Texas Legislative Education Code, Section 44.034, Notification of Criminal History, subsection (a) states: "A person or business entity that enters into a contract with a school district must give advance notice to the district if the person or an owner or operator of the business entity has been convicted of a felony. The notice must include a general description of the conduct resulting in the conviction of a felony." Subsection (b) states: " A school district may terminate a contract with a person or business entity if the district determines that the person or business entity failed to give notice as required by Subsection (a) or misrepresented the conduct resulting in the conviction. The district must compensate the person or business entity for services performed before the termination of the contract."

THIS NOTICE IS NOT REQUIRED OF A PUBLICLY-HELD CORPORATION

SUSPENSION OR DEBARMENT CERTIFICATE

Non-Federal entities are prohibited from contracting with or making sub awards under covered transactions to parties that are suspended or debarred or whose principals are suspended or debarred. Covered transactions include procurement for goods or services equal to or in excess of $100,000.00 Contractors receiving individual awards for $100,000.00 or more and all sub-recipients must certify that the organization and its principals are not suspended or debarred.

By submitting this offer and signing this certificate, this bidder:

- Certifies that the owner/operator has not been convicted of a felony, except as indicated on a separate attachment to this offer, in accordance with Sec. 44.034, Texas Education Code; and

- Certifies that no suspension or disbarment is in place, which would preclude receiving a federally funded contract.

VENDOR'S NAME:_____

VENDOR'S ADDRESS & TELEPHONE:_____

_____

AUTHORIZED COMPANY OFFICIALS NAME:_____
(Printed)

SIGNATURE OF COMPANY OFFICIAL:_____

DATE:_____

SCHEDULE 4
HOLD HARMLESS AGREEMENT

The Contractor shall defend, indemnify, and hold harmless, Northside Independent School District and all of its trustees, officers, agents, and employees from and against all suits, actions, or claims of any character brought for or on account of any injuries or damages (including death) received or sustained by any person or property on account of, arising out of, or in connection with, any negligent act or omission of Contractor or any agent, employee, subcontractor or supplier of Contractor in the execution or performance of the Contract for Paving Upgrades at Clarence Galm ES ("Project") designated as Project# RFCSP No. 2024-019 except to the extent caused by the negligence of Northside Independent School District.

The Contractor shall also defend, indemnify and hold harmless, Northside Independent school District and all of its trustees, officers, agents and employees, from and against claims by any subcontractor, supplier, laborer, materialman or mechanic for payment for work or materials provided on behalf of the Contractor in the performance of the Contract and all such claimants shall look solely to Contractor and not Northside Independent School District for satisfaction of such claims.

This Hold Harmless Agreement shall be binding upon the undersigned, and its successors, legal representatives, heirs and assigns.

DATED this _____ day of _____, 20____.

CONTRACTOR:

_____

By: _____

Name:_____

Title:_____

STATE OF TEXAS §
§
COUNTY OF BEXAR §

This instrument was acknowledged before me on the _____ day of _____, 20_____, by _____, _____ of _____, a Texas _____, on behalf of said _____.

_____
Notary Public, State of Texas

SCHEDULE 5

FINANCIAL STATEMENT BY OFFEROR

*[Include **Current Financial Statements** of **Offeror**]*

SCHEDULE 6

INSURANCE AND BONDING CERTIFICATION

The undersigned, being the President or a Vice President of the Offeror, hereby certifies that the Offeror shall be able to procure and provide to Owner, within the time specified in the Proposal Documents, evidence of insurance and original payment and performance bonds, all in accordance with the requirements set forth in the Proposal Documents.

The undersigned shall reimburse Owner for all damages, costs, and expenses (including reasonable attorneys' fees) which are incurred by Owner and which are related in any way to the falsity of any part of the certification set out herein.

Dated and Effective the _____ day of _____, 20_____.

_____
Signature

_____
Printed Name

_____
Position (President or Vice President)

STATE OF TEXAS §
§
COUNTY OF BEXAR §

This instrument was acknowledged before me on the ___ day of _____, 20_____, by _____.

_____
Notary Public State of Texas

My Commission Expires: _____

SCHEDULE 7

ALERT TO VENDORS

CONFLICT OF INTEREST QUESTIONNAIRE

On May 30, 2015, the Texas Senate passed House Bill No. 23, amending Chapter 176 to the Local Government Code, and imposing new disclosure and reporting obligations on vendors and potential vendors to local government entities beginning on September 1, 2015. This includes School Districts.

Failure to abide by these new statutory requirements can result in possible criminal penalties.

Northside Independent School District is requiring you to complete the attached CONFLICT OF INTEREST QUESTIONNAIRE (FORM CIQ) prepared by the Texas Ethics Commission, at the direction of the legislature and strongly recommends you become familiar with House Bill 914.

Northside Independent School District will not provide any further interpretation or information regarding these new requirements.

Please complete the attached CONFLICT OF INTEREST QUESTIONNAIRE and return it to:

Northside Independent School District
Ms. Andrea Tena
Director of Purchasing
607 Richland Hills Drive #700
San Antonio, Texas 78245

CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. *See* Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Date Received

1 **Name of vendor who has a business relationship with local governmental entity.**

2 ☐ **Check this box if you are filing an update to a previously filed questionnaire.** (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3 **Name of local government officer about whom the information is being disclosed.**

_____

Name of Officer

4 **Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.**

A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?

☐ Yes ☐ No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?

☐ Yes ☐ No

5 **Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.**

6 ☐ Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).

7

_____ _____

Signature of vendor doing business with the governmental entity Date

CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

(A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;

(B) a transaction conducted at a price and subject to terms available to the public; or

(C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

***

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds $2,500 during the 12-month period preceding the date that the officer becomes aware that

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than $100 in the 12-month period preceding the date the officer becomes aware that:

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

(1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);

(2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or

(3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

(1) the date that the vendor:

(A) begins discussions or negotiations to enter into a contract with the local governmental entity; or

(B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

(A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);

(B) that the vendor has given one or more gifts described by Subsection (a); or

(C) of a family relationship with a local government officer.

COMPETITIVE SEALED PROPOSALS
PROPOSAL CHECKLIST

Name of Offeror/Contractor: _____
Project Name: Paving Upgrades at Clarence Galm ES
NISD Bid No. _____
Date: _____

PROPOSAL SUBMISSION DOCUMENTS
Quantity Required – 1 ORIGINAL AND 1 COPY

☐ Proposal Form
☐ Proposal Security – Bid Bond
☐ Schedule 2 – Proposed Subcontractor and Suppliers

SCHEDULES
Quantity Required – **2** COPIES (unless otherwise noted)

☐ Schedule 1 – Contractor's Qualification Statement (AIA Form A305)
☐ Schedule 2 – Proposed Subcontractor and Suppliers (1 Submitted with Proposal Documents)
☐ Schedule 3 – Felony Conviction Notification
☐ Schedule 4 – Hold Harmless Agreement
☐ Schedule 5 – Financial Statements
☐ Schedule 6 – Bonding and Insurance Certification
☐ Schedule 7 – Conflict of Interest Questionnaire

SELECTION CRITERIA
Quantity Required – 2 COPIES

☐ Exhibit A – Relevant Experience
☐ Exhibit B – Project Management Ability
☐ Exhibit C – Past Performance

PROPOSAL FORMAT

1. The PROPOSAL SUBMISSION DOCUMENTS (all originals) should be submitted in a separate sealed envelope.
2. The SELECTION CRITERIA information and the SCHEDULES should be submitted in a binder with section dividers (tabs) labeled accordingly; Exhibit A, Exhibit B, Exhibit C, Schedules 1, 3, 4, 5, 6, & 7.

APPENDIX A
MINIMUM WAGE RATE DETERMINATION
FOR NORTHSIDE INDEPENDENT SCHOOL DISTRICT SCHOOL FACILITIES CONSTRUCTION BY CONTRACT

November, 2004

Pursuant to the requirements of law and in compliance with Government Code, §2258.001 et seq., the following wage determination is issued as required by law applicable to the work described. This wage determination shall be made a part of the contract for the work for which it is issued. The wage rates contained in the determination, including modifications, if any, shall be the minimum to be paid by contractors and subcontractors to each worker employed by it in the execution of the work.

The contractor shall comply with all the requirements of Government Code §2258.001 et seq.

When the contractor or subcontractor proposes to utilize a particular class of laborers or workmen not listed in the wage determination, such workman or laborer shall be classified or reclassified conformable to the wage determination and a report made in writing of such action to the Owner. When the interested parties are unable to agree on the classification or reclassification of workmen, the question with recommendations of the parties shall be submitted to the Owner for determination. The decision of the authorized representative of the Owner shall be furnished the parties and shall be binding and final.

The contractor and each subcontractor shall keep, or cause to be kept, an accurate record showing the names and occupations of all laborers, workmen and mechanics employed by him, in connection with the said public work, and showing also the actual per diem wages paid to each of such workers, which record shall be open at all reasonable hours to the inspection of the Owner, its officers and agents.

LOCATION OF PROJECT: Northside Independent School District
San Antonio, Bexar County, Texas

BUILDING CONSTRUCTION includes construction of sheltered enclosures with walk-in access for the purpose of housing persons, machinery, equipment or supplies, the installation of utilities, machinery and equipment, both above and below grade level, as well as incidental grading and paving.

MINIMUM HOURLY WAGE RATE

BUILDING CONSTRUCTION	**November, 2004**
Air Conditioning Mechanic	$22.96
Air Conditioning Mechanic Helper	$ 8.82
Air Conditioning Serviceman	$21.86
Air Conditioning Serviceman Helper	$10.10
Bricklayer/Stone Mason	$18.16
Carpenter, Form	$12.02
Carpenter, Trim and Finish	$14.92
Concrete Finisher	$12.47
Drywall Installer	$14.38
Electrician	$18.93
Electronic Technician	$14.45
Floor Layer, Resilient	$12.00
Glazier	$10.88
Ironworker, Reinforcing	$10.19
Ironworker, Structural	$12.50
Ironworker, Structural Helper	$11.06
Laborer, Skilled	$ 9.94
Laborer, Unskilled	$ 8.10
Operator, Crane	$15.90
Operator, Forklift	$12.50
Painter	$10.00
Pipefitter	$23.10
Pipefitter, Helper	$ 9.45
Plumber	$23.93
Plumber Helper	$ 9.65
Roofer	$ 9.95
Roofer, Helper	$ 9.01
Sheet Metal Worker, Roofing	$13.92
Sheet Metal Worker, Roofing Helper	$ 9.46
Sheet Metal Worker, Ductwork	$20.87
Sheet Metal Worker, Ductwork Helper	$ 7.99
Sprinkler System Installer (Fitter)	$18.70
Tile Installer, Ceramic	$12.15
Waterproofer Installer	$10.92
Welder, Certified Pipe	$24.14
Welder, Structural	$13.68

SITEWORK, PAVING, AND UTILITY CONSTRUCTION	
Carpenter, Rough	$14.90
Laborer, Common	$ 9.93
Laborer, Utility	$ 9.50
Operator, Crane	$11.50
Operator, Front-end-Loader (<2.5c.y.)	$11.08
Operator, Motor Grader (Fine)	$14.63
Pipelayer	$ 9.30
Steelworker, Structural	$13.11
Truck Driver, Single Axle, Light	$10.51
Truck Driver, Tamdem Axle or Semi	$11.78

Any worker employed on this project shall be paid at the rate of one and a half (1-1/2) times the regular rate for every hour worked in excess of forth (40) hours per week.

AIA® Document A201™ – 2017

General Conditions of the Contract for Construction, As Modified by Northside Independent School District, Owner of the Project

Effective Date: April 10, 2023

for the following PROJECT:
(Name and location or address)

« »
« »

THE OWNER:
(Name, legal status and address)

«Northside Independent School District »
«5900 Evers Road »
«San Antonio, Texas 78238 »
«Phone: 210-397-1200 »
«Fax: 210-257-1212 »

THE ARCHITECT:
(Name, legal status and address)

« »
« »
« »
« »
« »

TABLE OF ARTICLES

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.

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INDEX

(Topics and numbers in bold are Section headings.)

NOTE: Any reference hereinafter appearing, to an "AIA™ Document" or any AIA Documents included in the Contract Documents shall refer to such document "as modified by Northside Independent School District, Owner for the Project". In addition, any reference to AIA Documents shall all be considered to have included the Trademark designation (i.e. "™") after the AIA reference, whether or not included in the text. The AIA Documents are registered intellectual property of the American Institute of Architects and use and amendment of such forms is permitted only under an AIA license granted to the Northside Independent School District for this Project. No use may be made of this AIA document or the modifications herein other than as Contract Documents for this Project.

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, these General Conditions of the Contract for Construction, Owner's Special Conditions, the Bid or Proposal Documents prepared by the Owner, the Bid or Proposal Response Submitted by the Contractor (but only to the extent they do not contradict or are inconsistent with other portions of the Contract Documents), Drawings, Specifications identified in the Contract, Addenda issued prior to execution of the Contract, other documents specifically listed and identified as Contract Documents 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, or (3) an Allowance Expenditure Authorization ("AEA"), as defined in Section 7.1.2. Unless specifically enumerated in the Agreement, the Contract Documents **do not** include: (1) Terms and Conditions or other written provisions provided by any person or entity other than the Owner and purported to be incorporated herein; and (2) Clarifications and Assumptions included in any GMP Proposal or GMP Amendment of a Construction Manager, which are inconsistent with or create ambiguity in the Contract Documents. Clarifications and Assumptions shall be limited solely to clarifying the scope of the Work. The Contract Documents identified in this Section shall prevail in case of an inconsistency with subsequent versions made through manipulatable electronic operations or incorporation by reference. In the absence of individual signatures by Owner and Contractor, the Contract Documents identified in the signed contract prevail. Any reference in the Specifications to codes, standard specifications, or manufacturer's instructions shall mean the latest printed edition of each in effect on the date that the Contactor last submitted its bid or proposal for the Work, unless the date of the item is specifically noted.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the Owner and the Contractor and supersedes prior negotiations, conversations, understandings, conditions, representations, or agreements, with reference to the subject matter hereof, whether written or oral, express or implied. After execution of the Agreement, the Contract may be amended or modified only by a written Modification executed by duly authorized representatives of both the Owner and the Contractor. 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, including the transportation of materials and supplies to or from the site, competent supervision of the Work and the provision of insurance and payment of performance bonds in accordance with the Contract Documents. The Work shall include all things necessary, proper or incidental to carrying out and completing the work required in the Contract Documents and all other items of cost or value required to produce, construct and fully complete the public work identified by the Contract Documents. 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 be liable for results of interpretations or decisions rendered in good faith.

§ 1.1.9 Bid or Bidding
The terms "bids" or "bidding" shall include any kind of competitive purchasing under the Texas Education Code Chapter 44 and Texas Government Code Chapter 2269.

§ 1.1.10 Calendar Day
A calendar day is a day on the Gregorian calendar. The Contact Time is established in calendar days. Extensions of time granted, if any, will be converted to calendar days.

§ 1.1.11 Working Day
Working days include all Calendar Days except, Saturdays, Sundays, and Board approved and recognized holidays. Any day on which the District is conducting standardized testing as well as the first day of school, shall **not** be considered a "working day". In the event that acceleration is required by the Owner, pursuant to § 3.10.4, Working Days shall include Saturdays, Sundays and Board recognized holidays, but shall not include standardized testing days. The Current Year's School Calendar will be provided to the Contractor by the Owner. Additional days excluded from this definition, based on the access requirements of the Project, may be specifically defined in the AIA Document A101-2017 or AIA Document A133 – 2009, as applicable.

§ 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.

§ 1.2.1.2 During the course of the Work, should any conflict be found in or between the Contract Documents, the Contractor shall be deemed to have included in the cost of the Work the greater quantity or better quality, or the most stringent requirements, unless Contractor shall have obtained, before the submission of Contractor's Proposal, an interpretation in writing from the Architect as to what shall govern. The Architect, in case of such conflict, may interpret or construe the document so as to obtain the most substantial and complete performance of the Work consistent with the Contract Documents and reasonably inferable therefrom, in the best interests of Owner, and the Architect's interpretation shall be final. The terms and conditions of this clause shall not relieve any party of any other obligation under the Contract Documents.

§ 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 Precedence Of The Contract Documents. The most recently issued Document takes precedence over previous issues of the same Document. The order of precedence is as follows with the highest authority listed as "1".

.1 Contract Modifications as defined in Section 1.1.1 signed by Contractor and Owner, including the AIA Document A133 – 2009, Exhibit A. GMP Amendment [Note: Terms and Conditions or other written provisions offered as Modifications by any person or entity other than the Owner and purported to be incorporated the Agreement as well as Clarifications and Assumptions included in any GMP Proposal or GMP Amendment of a Construction Manager that are inconsistent with or create ambiguity in the Contract Documents are void and not considered a valid modification];

.2 Addenda, with those of later date having precedence over those of earlier date.

.3 Owner's Special Conditions

.4 General Conditions - AIA Document A201-2017, as modified by the Owner for the Project.

.5 Specifications and Drawings.

.6 AIA Document A101-2017 [or AIA Document A133 – 2009], as modified by the Owner for the Project.

.7 Proposal Documents including the Contractor's Bid or Proposal Form (to the extent such Proposal submitted by the Contractor is not inconsistent with other portions of the Contract Documents).

§ 1.2.5 Relation Of Specifications And Drawings.

§ 1.2.5.1 Specifications and Drawings are to be equivalent in authority and priority. Should they disagree in themselves, or with each other, prices shall be based on the better quality and greater quantity of Work indicated. In the event of the above-mentioned disagreements, the resolution shall be determined by the Architect.

§ 1.2.5.2 Where, in the Specifications and Drawings, certain products, manufacturer's trade names, or catalog numbers are given, it is done for the express purpose of establishing a standard of function, dimension, appearance, and quality of design, in harmony with the Work, and is not intended for the purpose of limiting competition. Materials or equipment shall not be substituted unless such substitution has been specifically accepted for use on this Project by the Architect.

§ 1.2.6 When the Work is governed by reference to standards, building codes, manufacturer's instructions, or other documents, unless otherwise specified, the current edition adopted by the Authorities Having Jurisdiction over the Project ("AHJ") as of the Agreement date shall apply.

§ 1.2.7 Requirements of the AHJ apply as minimum requirements only and do not supersede more stringent specified requirements.

§ 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 Specifications and Drawings, 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 Where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing unless otherwise provided herein, to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly delivered (whether actually received or not) when deposited with the United States Postal Service, postage prepaid, certified mail, return receipt requested, and addressed to the intended recipient at the address shown in this Agreement. Notice may also be given in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement, by regular mail, personal delivery, courier delivery, facsimile transmission, or other commercially reasonable means and will be effective when actually received. Any address for notice may be changed by written notice delivered as provided.

§ 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 shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents

§ 1.8 Building Information Models Use and Reliance [Paragraph Deleted].

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the Board of Trustees of the Northside Independent School District and is referred to throughout the Contract Documents as if singular in number. The Owner may designate in writing one or more persons to represent the Owner; however, such representatives shall have the authority to bind the Owner only to the extent expressly authorized by the Owner and shall have no implied authority. Unless otherwise designated in the Contract Documents, Owner's authorized representative shall be the Superintendent of Schools, who may delegate responsibilities as appropriate. Except as otherwise provided in Section 4.2.1, the Architect does not have the authority to bind the Owner. The term "Owner" means the Owner or the Owner's authorized representative. Owner's Board of Trustees hereby delegates to the Superintendent of Schools or designee the authority to approve change Orders for changes to the Work as provided in Board Policy CV(Local).

§ 2.1.2 The Owner may engage a third-party consultant or consultants, in addition to the Project Architect or Engineer to represent the Owner. The Owner will notify the Contractor of the identity of such consultant(s).

§ 2.1.3 The Contractor acknowledges that no lien rights exist with respect to public property.

§ 2.1.4 The Contractor stipulates and agrees that the Owner has no duty to discover any design errors or omissions in the Drawings, Specifications and other Contract Documents, and has no duty to notify Contractor of same. By entering into the Contract Documents or any Agreement with any Architect, Owner does not warrant the adequacy and accuracy of any Drawings, Plans, Specifications or other Construction Documents.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Pursuant to the requirements of Texas Business and Commerce Code section 56.054(e)(3), the Owner represents that funds are available and have been authorized for the full contract amount of the Work. Notwithstanding the foregoing, if funds are required in any budget year to be reallocated and non-appropriated the District will be permitted to terminate for convenience as provided in 14.4.

§ 2.2.2 [Paragraph Deleted.]

§ 2.2.3 [Paragraph Deleted.]

§ 2.2.4 [Paragraph Deleted.]

§ 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 a design professional lawfully licensed to practice architecture or engineering, as appropriate to the Project or Projects, or an entity consisting of design professionals lawfully practicing architecture or engineering, as appropriate to the Project or Projects, in the in the state of Texas. 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 Design Architect or Engineer terminates, the Owner shall employ a successor whose status under the Contract Documents shall be that of the Architect or Engineer.

§ 2.3.4 The Owner may furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site, but the Owner shall have no duty to do so. The Contractor shall be responsible to independently investigate the physical characteristics, legal limitations, and utility locations for the site of the Project. Notwithstanding the delivery of a survey or other documents by the Owner, Contractor shall use reasonable efforts to perform all Work in such a manner to avoid damaging any utility lines, cables, pipes, or pipelines on the property during construction. Contractor shall be responsible for, and shall repair at Contractor's own expense, any damage done to such lines, cables, pipes, and pipelines. 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 Information or services required of the Owner by the Contract Documents shall be furnished by the Owner within a reasonable time following actual receipt of a written request

§ 2.3.6 At the time of the award of the Contract, the Contractor will be furnished, free of charge, up to ten (10) complete sets of Specifications and Drawings. Additional sets of the Specifications and Drawings will be furnished to the Contractor at the request and expense of the Contractor, to be paid by the Contractor at the time of delivery of the Specifications and Drawings.

§ 2.3.7 Owner's personnel may, but are not required to be, present at the construction site during progress of the Work to observe and facilitate the Work, and to verify the Contractor's records of the number of workers employed on the Work, their occupational classification, the time each is engaged in the Work, and the equipment used in the performance of the Work for purpose of verification of Contractor's Applications for Payment.

§ 2.4 Owner's Right to Stop the Work

§ 2.4.1 If the Contractor fails to correct non-conforming or defective Work as required by Section 12.2, or fails to complete the Work on time as required by Article 3 of the Agreement or is in default of any of its material obligations hereunder or due to the existence of a health or safety issue, the Owner, by a written order signed by an a District Designee specifically so empowered by the Owner, may order 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. This right shall be in addition to, and not in restriction of, the Owner's right under Section 12.2. The Contractor shall not be entitled to any damages or increase in the Contract Sum due to delays or disruptions to the Work. This limitation on damages is further subject to the limitations set forth in Section 15.1.7.

§ 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 three-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. The Architect or Owner 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. It is understood and agreed that the relationship of Contractor to Owner shall be that of an Independent Contractor. Nothing contained herein or inferable herefrom shall be deemed or construed to (1) make Contractor the agent, servant, or employee of the Owner, or (2) create any partnership, joint venture, or other association between Owner and Contractor. Any direction or instruction by Owner in respect of the Work shall relate to the results the Owner desires to obtain from the Work and shall in no way affect Contractor's independent contractor status as described herein. The Contractor shall be authorized to do business in the state of Texas. 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, or the Construction Manager-at-Risk or its authorized representative, as applicable to the Project.

§ 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 Owner or Owner's consultants, if applicable, conducted in accordance with the Contract Documents or 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.

§ 3.1.4. Pursuant to Texas Labor Code Sec. 214.008, the Contractor and any subcontractor on the Project shall properly classify, as an employee or an independent contractor, in accordance with Texas Labor Code Chapter 201, any individual the Contractor or subcontractor directly retains and compensates for services performed in connection with this Agreement. Any Contractor or subcontractor who fails to properly classify such an individual may be subject to the penalties of Texas Labor Code Sec. 214.008(c).

§ 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. The Contractor and each Subcontractor shall evaluate and satisfy themselves as to the conditions and limitations under which the Work is to be performed, including without limitation: (1) the location, condition, layout and nature of the Project site and surrounding areas, (2) generally prevailing climatic conditions, (3) anticipated labor supply and costs, (4) availability and cost of materials, tools and equipment, and (5) other similar issues. The Owner assumes no responsibility or liability for the physical condition or safety of the Project site or any improvements located on the Project site, or for price escalations in the marketplace. The Contractor shall be solely responsible for providing a safe place for the performance of the Work. The Owner shall not be required to make any adjustment in either the Contract Sum or Contract Time in connection with any failure by the Contractor or any Subcontractor to comply with the requirements of this Section.

§ 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. Contractor shall not perform any Work it knows involves an error, inconsistency, or omission without further instructions to Contractor or revised Construction Documents from the Architect. The exactness of grades, elevations, dimensions, or locations given on any

Drawings issued by the Architect, or the Work installed by other contractors, is not guaranteed by the Architect or the Owner. The Contractor shall, therefore, satisfy itself as to the accuracy of all grades, elevations, dimensions, and locations. In all cases of interconnection of its Work with existing or other Work, it shall verify at the site all dimensions relating to such existing or other Work. Any errors due to the Contractor's failure to so verify all such grades, elevations, dimensions, or locations shall be promptly rectified by the Contractor without any additional cost to the Owner.

§ 3.2.3 Neither the Owner nor the Contractor is 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 has knowledge that any of the products or systems specified will perform in a manner that will limit the Contractor's ability to satisfactorily perform the Work or to honor his warranty or will result in a limitation of or interference with the Owner's intended use, then the Contractor shall promptly notify the Architect and Owner in writing, providing substantiation for his position. 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. Nothing in this section shall provide Contractor with an affirmative claim for damages, as such a claim is prohibited under this Contract.

§ 3.2.5 The Contractor stipulates and agrees that the Contract Documents may not be free from errors, inconsistencies, or omissions, and further agrees that the Owner has no duty to discover any design errors or omissions in the Drawings, Specifications and other Contract Documents and that the Owner makes no warranty as to the adequacy, completeness or accuracy of the Drawings, Specifications or other Construction Documents, either express or implied. Execution of the Contract by the Contractor is a representation that the Contractor has thoroughly reviewed and become familiar with the Contract Documents and that the Contractor is not aware of any errors, inconsistencies or omissions in the Contract Documents which would delay the Contractor in the performance of the Contract Work. The Contractor shall not be entitled to any damages or increase in the Contract Sum due to delays or disruptions to the Work. This limitation on damages is further subject to the limitations set forth in Section 15.1.7.

§ 3.2.6 The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for the Architect to evaluate and respond to the Contractor's request for information, where such information was available to the Contractor from a careful study and comparison of the Contract Documents, field conditions, other Owner provided information, Contractor prepared coordination drawings, or prior Project correspondence or documentation.

§ 3.2.7 The Contractor shall use the "Request For Information" (RFI) form required by the Contract Documents/Project Manual. The Contractor and Architect shall keep a log of all RFI's submitted by date and number the RFI's consecutively beginning with the number 1.

§ 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 assign a Superintendent who shall make decisions in behalf of the Contractor and its Subcontractors. The Superintendent shall be on the Project, in this capacity, at all times while Work on the Project is in progress. 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 written 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 Contractor shall bear responsibility for design and execution of acceptable trenching and shoring procedures, in accordance with Texas Government Code, Section 2166.303 and Texas Health and Safety Code, chapter C, Sections 756.021, *et seq.* To the extent the trench excavations that exceed a depth of five (5) feet, shall require any applicable subcontractor to comply all such procedures. Trench excavation safety protection shall be a separate pay item shown on the Schedule of Values and shall be based on linear feet of shoring used. Special shoring requirements shall also be a separate pay item, shown on the Schedule of Values, and shall be based on the square feet of shoring used.

§ 3.3.5 Contractor acknowledges that the Work may be performed in connection with an educational or support facility which is currently occupied and in use. It is imperative that Contractor's operations and the performance of the Work not interfere with, interrupt, disturb, or disrupt Owner's normal operations or facilities. Contractor agrees to and shall comply with all rules, regulations and requirements of the Owner and the school campus on which the Work is to be performed and shall take all steps necessary to protect and guard the safety of the employees, students and invitees of Owner. Contractor shall exercise the utmost skill and judgment to ensure that continuing construction activity will not interfere with the use, occupancy and quiet enjoyment of facilities in use on the site. Contractor recognizes that the ongoing activities in proximity with its construction activities shall result in the need for prompt and effective coordination of its services with those involved in the ongoing utilization of the premises. Such coordination and adequate site access shall be the responsibility of Contractor. Contractor understands and accepts the difficulties and costs associated with working in an existing facility and the potential delays and disruptions in its Work and has included the cost of such assumptions in the Contract Time and the Contract Sum. The Contractor shall perform all the Work in such a manner as to cause minimum interference with the operations of the Owner and other contractors and Subcontractors on the site, and shall take, and cause the Contractor's and its Subcontractor's employees, agents, licensees and permittees to take all necessary precautions to protect the Work and the site and all persons and property thereon from damage or injury.

§ 3.3.6 Representatives of the Owner, Contractor, and Architect shall meet periodically at mutually agreed upon intervals, for the purpose of establishing procedures to facilitate cooperation, communication, and timely responses among the participants. By participating in this arrangement, the parties do not intend to create additional contractual obligations or modify the legal relationships which may otherwise exist.

§ 3.3.7 The Owner may require that the Contractor use and/or respond to certain Owner-furnished forms or inquiries during the course of the Project. From time to time, there may be future revisions, changes, additions or deletions to these forms. The fact that the Owner modifies and increases reasonable reporting requirements shall not serve as the basis for a claim for additional time or compensation by the Contractor.

§ 3.4 Labor and Materials

§ 3.4.1 These Contract Documents shall not be construed to deny or diminish the right of any person to work because of the person's membership or other relationship status with respect to any organization. Texas Gov't Code §2269.054. These Contract Documents shall not be construed to prohibit, require, discourage or encourage a person, or discriminate against a person bidding on this contract from entering into or declining to enter into, or adhering to, an agreement with a collective bargaining organization relating to this Project. Texas Gov't Code §2269.0541. Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for qualified, careful, and efficient workers and labor, eligible to work in accordance with state and federal law, and shall provide and pay for 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. The Contractor shall pay fees for public or private water, gas, electrical and other utility service at the site until Substantial Completion of the Work.

In the event that the Work will be conducted at an existing District site, where utility services are existing on site and reasonably accessible to the Contractor, the Owner may elect, in writing, to provide and pay for utility service for the Project site. Agreement to pay for such utility service shall not absolve the Contractor from using utilities judiciously in connection with its performance of the Work. In all cases, the Contractor shall secure and arrange for all necessary utility connections. Contractor shall be subject to being back-charged for the amount of a non-judicious use or waste of utilities by the Contractor.

§ 3.4.1.1 Prevailing Wages
The Project is subject to the Texas Government Code, Chapter 2258, Prevailing Wage Rates. This statute requires the Contractor and any Subcontractor to pay not less than the prevailing rates of per diem wages in the locality at the time of construction to all laborers, workmen, and mechanics employed by them in the execution of the contract.

§ 3.4.2.2 In accordance therewith, the Owner has established a scale of prevailing wages which is incorporated in the Project specifications, and not less than this established scale must be paid on the Project. Any workers not included in the schedule shall be properly classified and paid not less than the rate of wages prevailing in the locality of the Work at the time of construction.

§ 3.4.1.3 A Contractor or Subcontractor who violates the provisions of Sections 3.4.1.1 or 3.4.1.2 shall pay to Owner the sum of Sixty Dollars and No/100 ($60.00) for each worker employed for each calendar day or part of the day that the worker is paid less than the wage rate stipulated in the scale of prevailing wages applicable to this Project, as required by Texas Government Code Section 2258.023(b).

§ 3.4.2 Substitutions. Within thirty (30) days after execution of the Contract, the Owner and the Architect will consider any formal request made by the Contractor for the substitution of products in place of those specified in the Contract Documents, provided that the Instructions to Bidders' and/or Offerors for the Project specifically permitted the substitution or such requests for substitution. Requests for Substitutions submitted after thirty (30) days will not be considered unless the product has become impossible to obtain due to circumstances beyond the control of the Contractor. Substitutions will not be accepted unless approved through the procedures set forth in the Contract Documents. The Owner shall be entitled to deduct from the Contract Sum, regardless of acceptance or rejection, amounts paid to the Architect to evaluate the Contractors proposed substitutions. The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect to make agreed upon changes in the Specifications and Drawings made necessary by the Owner's acceptance of such substitutions. By making requests for substitution pursuant to this Section 3.4.2, the Contractor:

.1 Represents that the Contractor has personally investigated the proposed substitute precut and determined that it is equal or superior in all respects to the project specified;
.2 Represents that the Contractor will provide the same warranty for the substituted product as the Contractor would have provided for the specified product;
.3 Certifies that the cost breakdown presented with the request is complete and includes all related costs, except for the Architect's redesign costs, if any, and waives all claims for additional costs related to the substitution which subsequently become apparent;
.4 Agrees to coordinate and supervise the installation of the proposed substitute, making such changes as may be required for the Work to be complete in all respects; and
.5 Agrees to reimburse Owner and Architect for review or redesign services associated with any re-approval by applicable governmental authorities related to the substitution.

§ 3.4.2.1 Each request for substitution shall be submitted to the Architect with appropriate shop drawings, product data, and certified test results substantiating the proposed product equivalence; and will include, complete documentation substantiating compliance of the proposed substitution with the Contract Documents, together with a detailed breakdown of the cost of the Project bid and the cost of the suggested substitution, which will include the cost of labor and materials, the contractor's overhead and profit allocable thereto.

§ 3.4.3 The Contractor shall provide adequate supervision at the jobsite and 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 be responsible for the actions of Contractor's forces, Subcontractor's forces and all tiers of Sub-subcontractor's forces. The Contractor recognizes that the Project Site is a public-school campus, and will prohibit the possession or use of alcohol, controlled substances, tobacco, and any prohibited weapons on the Project Site and shall require adequate

dress of the Contractor's forces consistent with the nature of the Work being performed, including wearing shirts at all times. Sexual harassment of employees of the Contractor or employees or students of the Owner by employees of the Contractor is strictly forbidden. Any employee of the Contractor who is found to have engaged in such conduct shall be subject to appropriate disciplinary action by the Contractor, including removal from the job site.

§ 3.4.4 The Contractor shall only employ or use labor in connection with the Work capable of working harmoniously with all trades, crafts, and any other individuals associated with the Project.

§ 3.4.5 Criminal History Records Checks.

§ 3.4.5.1 Prior to commencement of its work on the Project the Contractor will provide written certification to the Owner stating that:

§ 3.4.5.1.1 The Contractor has complied with the requirements of Texas Education Code, Section 22.08341 and the procedures and requirements outlined in Administrative Regulation CJA(Local) adopted by the Board of Trustees national criminal history record information ("CHRI") required pursuant to Texas Education Code, Section 22.08341 on all of Contractor's employees, independent contractors, agents, or Subcontractors, and Contractor's Subcontractors of every tier (collectively "Employees") who will have continuing duties related to the Project and the opportunity for direct contact with students in connection with their performance of their continuing duties; or

§ 3.4.5.1.2 The Contractor has provided an original executed copy of Form 1. Exemption from Requirements of Texas Education Code, Section 22.08341, included in Administrative Regulation CJA(Local) that:

.1 Neither the Contractor nor its Subcontractors of every tier, have any employees who will have continuing duties related to the Project and the opportunity for direct contact with students in connection with their performance of their continuing duties; or

.2 The work of the Project does not involve the construction, alteration, or repair of an instructional facility; or

.3 The work of the Project is construction of a new instructional facility, and all persons involved in the Work will be competed not later than the seventh day before the first date the facility will be used for instructional purposes; or

.4 The work of the Project involves an existing instructional facility, but the public work area: (a) contains its own sanitary facilities; (b) the area is separated from all areas used by students by a secure barrier fence that is not less than six feet in height; and (c) the Contractor has adopted a policy prohibiting employees, including subcontracting entities and their employees, from interacting with students or entering areas used by students, has informed employees of the policy, and will enforce the policy at the area where the Work is being performed.

§ 3.4.5.2 If the Contractor, has complied with Administrative Regulation CJA(Local) and it is determined by the District's Representative that any of the Employees, during the preceding thirty (30) years, has been convicted of one of the following offenses, if at the time of the offense the victim was under eighteen (18) or enrolled in a public school: (a) a felony offense under Title 5, Texas Penal Code; (b) an offense for which a defendant is required to register as a sex offender under Chapter 62, Texas Code of Criminal Procedure; or (c) an equivalent offense to (a) or (b) under federal law or the laws of another state ("Disqualifying Criminal History") the Contractor will exclude that person from assignment to the Project. The Contractor understands that they will not have access to the results of such criminal history records check, based on statewide regulations beyond the control of the Owner, and agrees to rely solely on the judgment of the Owner as to whether any of the Employees must be excluded from the Project.

§ 3.4.5.3 Contractor understands and agrees that if CHRI is required to be obtained on any Employee Texas Education Code, Section 22.08341, and Contractor receives information during the course of the Project that an Employee on the Project is arrested or convicted for any of the Disqualifying Criminal History offenses described in Subparagraph **3.4.5.3** during the performance of the Work, Contractor will immediately remove the Employee (or cause the applicable subcontractor to remove the Employee from the District's property or other location where students are regularly present, and notify the District of said removal within three (3) days of doing so. Contractor understands that any failure to comply with the requirements of this section may be grounds for termination of this Agreement.

§ 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. The Contractor further warrants that Contractor shall perform the Work in a good and workmanlike manner, continuously and diligently in accordance with generally accepted standards of construction practice for construction of projects similar to the Project, except to the extent the Contract Documents expressly specify a higher degree of finish or workmanship, in which case the standard shall be the higher standard. All material shall be installed in a true and straight alignment, level and plumb; patterns shall be uniform; and jointing of materials shall be flush and level, unless otherwise directed in writing by the Architect. 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 (unless such maintenance is Contractor's responsibility), improper operation, or normal wear and tear and normal usage, but such exclusions shall only apply after Owner has taken occupancy of the damaged or defective portion of the Project. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. No acceptance or payment by the Owner shall constitute a waiver of the foregoing and nothing herein shall exclude or limit any warranties implied by law. The warranty provided in this Section 3.5.1 shall be referred to herein as the "Contractor's Warranty". The material, equipment, or other special warranties provided for herein and the Contractor's Warranty, shall be in addition to and not in limitation of any other warranty or remedy required by law or by the Contract Documents.

§ 3.5.2 Except when a longer warranty time is specifically called for in the Contract Documents or is otherwise provided by law, the Contractor's Warranty and 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 this Section 3.5.2., as follows: Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof, as otherwise provided in the Certificate of Substantial or Partial Completion, or if Work is to be completed or corrected after the date of Substantial Completion and prior to final payment, on the later of the date the Work is completed or corrected and accepted by the Owner and Architect or the date of final payment ("Commencement Date").

§ 3.5.3 Contractor acknowledges that the Project may involve construction work on more than one (1) building for the Owner. In such case, each building, or approved phase of each building, may have its own, separate, and independent date of Substantial Completion (or, for Work to be completed or corrected after the date of Substantial Completion, the Warranty Commencement Date). Contractor shall maintain a complete and accurate schedule of the date(s) of Substantial Completion, the date(s) of Final Completion, and the dates upon which the warranties under Section 3.5 will expire, on each phase or building and will provide a copy of such Schedule to the Owner, as required in Subsection 3.5.7, as a condition precedent to Final Payment.

§ 3.5.4 The warranties provided herein shall be in addition to and not in limitation of any other warranty or remedy required by law or by the Contract Documents, and such warranties shall be interpreted to require Contractor to replace defective materials and equipment and re-execute defective Work. In the event of failure of materials, products, or workmanship or discovery of products material or workmanship which does not conform to the requirements of the Contract Documents either during construction or during the warranty period, the Contractor shall take appropriate measures to ensure correction of the defective work or replacement of the defective materials, without cost to the Owner. Such warranty shall be maintained notwithstanding that certain systems may be activated prior to Substantial Completion as required for the satisfactory completion of the Project. Upon written notice from the Owner or Architect, the Contractor shall promptly remedy defects as covered by Contractor's warranty. If Contractor does not respond to the written notice, either by beginning corrective work or notifying Owner in writing regarding when corrective work will begin, within ten (10) days of Contractor's receipt of the written notice, then the Owner may take measures to correct the Work and Contractor will be obligated to reimburse Owner's costs. The provisions of this subparagraph shall be in addition to, and not in lieu of, any other rights and remedies available to the Owner.

§ 3.5.5 When deemed necessary by the Owner and prior to installation of any item specifically made subject to a performance standard or regulatory agency standard under any provision of the Contract Documents, Contractor shall furnish proof of conformance to the Architect. Proof of conformance shall be in the form of an affidavit from

the manufacturer certifying that the item is in conformance with the applicable standards; an affidavit from a testing laboratory certifying that the product has been tested within the past year and is in conformance with the applicable standards; or such further reasonable proof as is required by the Architect.

§ 3.5.6 The Contractor agrees to assign to the Owner at the time of Final Completion of the Work any and all manufacturer's warranties relating to equipment, machinery, materials, equipment or components and labor incorporated into the Work and further agrees to perform the Work in such manner so as to preserve any and all such manufacturer's warranties. Contractor shall take no action or fail to act in any way which results in the termination or expiration of such third-party warranties, or which otherwise results in prejudice to the rights of Owner under such warranties. Contractor agrees to provide all notices required for the effectiveness of such warranties and shall include provisions in the contracts with the providers and manufacturers of such systems and equipment whereby Owner shall have a direct right, but not a duty, of enforcement of such warranty obligations. The Contractor Warranty provided in this Section 3.5 shall in no way limit or abridge the warranties of the suppliers of equipment and systems which are to comprise a portion of the Work. A complete set of all warranties required from contractors, manufacturers, or suppliers as appropriate, on the manufacturer's or supplier's approved forms, executed by Contractor as required, with a warranty commencement date noted as required, and in the form required by Subparagraph 3.5.3 shall be submitted to the Architect in the form required by Subparagraph 3.5.7, for delivery to the Owner, as a condition precedent to final payment.

§ 3.5.7 Prior to receipt of Final Payment, Contractor shall: (1) obtain duplicate original warranties, executed by all subcontractors, and the warranties of suppliers and manufacturers, noting the Commencement Date on the face of each; (2) verify that the documents are in proper form and contain full information; (3) Co-sign warranties when required; (4) bind all warranties in commercial quality 8-1/2 X 11 inch three-ring binder, with hardback, cleanable, plastic covers; (5) label the cover of each binder with a typed or printed title labeled "WARRANTIES", along with the Title of the Project; name, address and telephone number of Contractor; and name of its responsible principal; (6) include a Table of Contents, with each item identified by the number and title of the specification section under which the product is specified; (7) include the Schedule of Commencement Dates required by Subparagraph 3.5.3; (8) separate each warranty with index tab sheets keyed to the Table of Contents listing; and (8) deliver warranties in the form described in this Subparagraph 3.5.7, to the Architect who will review same prior to submission to the Owner.

§ 3.5.8 Contractor shall provide notice of the warranty expiration date to Owner and Architect at least one (1) month prior to each warranty expiration date. Prior to expiration of the warranty period, Contractor shall accompany the Owner and Architect on reinspection of the building and be responsible for correcting any reasonable additional deficiencies not caused by the Owner or by the use of the building which are observed or reported during the reinspection. Contractor shall be responsible for correcting any warranty items which are observed or reported during the warranty period under this Section 3.5. If Contractor fails to provide notice of the warranty expiration as required by this Section 3.5.5 Contractor's warranty obligations described in this Section shall continue until the required inspection is conducted and any deficiencies found in the inspection corrected. Neither the Owner's nor the Architect's inspection or failure to inspect shall relieve the Contractor of any obligation hereunder.

§ 3.6 Taxes.

§ 3.6.1 Owner, as a tax-exempt organization, is not required to pay state sales tax. The materials to be used in the Work will be exempt from sales, excise and use tax as provided by the Texas Tax Code and applicable regulations. It is the intention of the Owner that the Contractor will be responsible for all sales and use taxes, if any, on materials and services provided to be provided by the Contractor, any subcontractor, or supplier in performance of this Contract regardless of whether the exemption can be claimed by the Contractor, its subcontractor or supplier.

§ 3.6.2 The Owner shall provide a copy of its exemption certificate evidencing exemption from such taxes upon Contractor's request. prior to commencement of the Work. It shall be the Contractor's responsibility to maintain and provide all other documentation to claim applicable exemptions.

§ 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. The Owner shall reimburse Contractor for the actual cost of the Building Permit, without mark-up as noted in the Owner's Special Conditions.

§ 3.7.2 In performing its obligations hereunder, the Contractor shall fully comply with all applicable laws, statutes, ordinances, codes, rules, regulations, lawful orders and decrees of all public authorities applicable to performance of the Work, and when requested shall furnish evidence satisfactory to the Owner of such compliance, as noted in Owner's Special Conditions.

§ 3.7.3 If the Contractor performs Work when Contractor knows or reasonably should have known it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, the Contract Documents or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction. The Contractor agrees to indemnify, defend and hold harmless the Owner, its trustees, officers, representatives, agents and employees from and against all claims, fines, penalties, or liabilities from or arising out of such Work by the Contractor, or based upon the actual or asserted violation by the Contractor of any laws, ordinances, rules, regulations, orders or decrees, applicable to such Work.

§ 3.7.4 Claims for Concealed or Unknown Conditions

§ 3.7.4.1 Contractor acknowledges that there may exist at the Project site certain soil and geological conditions and/or surface physical conditions which are not disclosed in the Contract Documents, and which have been known to or may be reasonably anticipated to occur in the area or be related to any past use of the Project site, including, without limitation, the presence of rock and its hardness, geologic formations, differing soils, and surface structures, equipment or other impediments, either natural or man-made (collectively, "Subsurface Conditions"). Owner makes no representations or warranties regarding Subsurface Conditions at the Project site, or of the accuracy or continuity of conditions which may be noted in any reports furnished or made available to Contractor. Contractor covenants and agrees that any such reports are furnished or made available by Owner to Contractor for information purposes only, and Contractor acknowledges that Owner is not responsible for the content thereof. Contractor shall be responsible for inspecting the site and determining the existence or likelihood of any Subsurface Conditions which may affect the Contract Time or the Contract sum, or both. The Contract Time and the Contract Sum bid by Contractor shall be deemed to include all costs of and time to complete all Work associated with or attributable to Subsurface Conditions, and Contractor shall not be entitled to submit a claim for or to obtain an extension of the Contract Time or increase in the Contract Sum due to the existence of Subsurface Conditions.

§ 3.7.4.2 Except as provided above with respect to Subsurface Conditions, if conditions are encountered at the site which are concealed physical conditions which were not known to the Contractor and which differ materially from those indicated in the Contract Documents, then the Contractor shall notify the Owner and the Architect of such conditions promptly before conditions are disturbed, and in no event later than three (3) working days after first observance of the conditions. The Architect will promptly investigate such conditions and report its findings to the Owner. Requests by the Contractor for an extension of the Contract Time due to the Contractor's discovery of concealed physical conditions which were not known to the Contractor, and which differ materially from those indicated in the Contract Documents, a formal Claim must be submitted to the Owner and the Architect in accordance with within twenty-one (21) calendar days after the discovery by the Contractor of such condition. If the Owner and Architect are not so notified within such twenty-one (21) calendar days' time frame, then the Contractor shall be responsible for any additional construction costs associated with the unexpected or unforeseeable condition at the Project Site. If the Owner and the Contractor cannot agree on an adjustment to the Contract Time, the adjustment shall be subject to mediation pursuant to Article 15.

§ 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 Time arising from delays related to the existence of such remains or features may be made as provided in Article 15.

§ 3.7.6 The Contractor shall also obtain all permits and approvals, and pay all fees and expenses, if any, associated with National Pollutant Discharge Elimination System (NPDES) regulations administered by the Environmental Protection Agency (EPA) and local authorities, if applicable, that require completion of documentation and/or acquisition of a "Land Disturbing Activities Permit" for the Project. Contractor's obligations under this Section do not require it to perform engineering services during the pre-construction phase to prepare proper drainage for the

construction sites. However, any drainage alterations made by Contractor during the construction process which require the issuance of a permit shall be at Contractor's sole cost.

§ 3.7.7 The Contractor shall certify in writing that no materials used in the Work contain lead or asbestos materials in them in excess of amounts allowed by Local/State standards, laws, codes, rules and regulations; the Federal Environmental Protection Agency (EPA) standards and/or the Federal Occupational Safety and Health Administration (OSHA) standards, whichever is most restrictive. The Contractor shall provide this written certification as part of submittals under the Section in the Instruments of Service related to Contract Closeout.

§ 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 within such time as is reasonably specified by the Contractor as necessary to avoid delay in the Work.

§ 3.8.4 When performing Work under allowances, where reasonably possible, Contractor shall solicit and receive no fewer than three (3) written proposals and shall provide the Work as directed by the Architect, upon Owner's written approval, on the basis of the best value for the Owner.

§ 3.9 Superintendent

§ 3.9.1 Contractor will provide adequate administration and supervision of the Work. Unless otherwise required by a pre-proposal addendum, the Contractor shall employ, at a minimum, one half-time Project Manager to be responsible for performing the duties as required by the Owner's Special Conditions, one full-time Job Superintendent and assistants deemed necessary who shall be in attendance at the Project site during performance of the Work. The Project Manager and Job Superintendent shall be approved by the Owner and Architect and will be replaced by the Contractor upon reasonable request by the Owner. The Project Manager and Superintendent shall represent the Contractor, and communications given to the Project Manager and/or Superintendent shall be as binding as if given to the Contractor. The Contractor shall not replace the Project Manager or Superintendent prior to Final Completion of the Work unless (1) the Project Manager or Superintendent shall cease to be employed by the Contractor or its subsidiaries or affiliated companies; or (2) the Owner agrees to such replacement. Neither the Project Manager nor the Superintendent may be employed on any other project prior to Final Completion of the Work. From Substantial Completion to Final Completion, the Superintendent shall be on-site as necessary to ensure that Final Completion occurs within thirty (30) days of Substantial Completion.

§ 3.9.2 Contractor shall furnish a list to the Architect of all engineers, consultants, job-site superintendents, Subcontractors and suppliers involved in construction. The Architect shall provide such information to the Owner.

- **.1** The Owner may reject or require removal of any engineer, consultant, job superintendent, or employee of the Contractor, Subcontractor or Sub-subcontractor involved in the Project.
- **.2** Contractor shall provide an adequate staff for the proper coordination and expedition of the Work. Owner reserves the right to require Contractor to dismiss from the Work any employee or employees that Owner may deem incompetent, careless, insubordinate, or in violation of any provision in these Contract Documents. This provision is applicable to Subcontractors, Sub-subcontractors and their employees.

.3 The Owner reserves the right to utilize one or more of its employees to function in any capacity on the jobsite.

§ 3.9.3 The Owner shall be notified as soon as Contractor becomes aware, but in no event fewer than twenty-four (24) hours before any time that superintendent will not be present at the site for any reason, except illness. If the reason is due to illness, then Owner shall be notified as soon as it obtains the information but in no event later than the beginning of that day. In such event of such absence, the Contractor will designate a person as acting superintendent and promptly notify the Owner.

§ 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 and approval, a Contractor's initial construction schedule for the Work. The initial schedule shall not exceed the time limits set forth in the Contract Documents and shall thereafter be updated on a monthly basis and submitted with each application for payment. The construction schedule shall be in a detailed precedence - style critical path method ("CPM") format satisfactory to the Owner and the Architect that shall also (i) provide a graphic representation of all activities and events that will occur during performance of the Work; (ii) identify each phase of construction and occupancy; and (iii) set forth dates that are critical in ensuring the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents (hereinafter referred to as "Milestone Dates"). Neither the Owner or the Contractor shall have exclusive ownership of float time in the schedule, and all float time shall inure to the benefit of the Project. The Contractor agrees to use its best efforts not to sequence the Work or assign activity durations so as to produce a schedule in which more than one-fourth of the remaining activities have no float time. Submission of any schedule under this Contract constitutes a representation by the Contractor that: (1) the schedule represents the sequence in which the Contractor intends to prosecute the remaining Work; (2) the schedule represents the actual sequence and durations used to prosecute the completed Work; (3) that to the best of its knowledge and belief the Contractor is able to complete the remaining Work in the sequence and time indicated; and, (4) that the Contractor intends to complete the remaining Work in the sequence and time indicated.

§ 3.10.2 If no submittal schedule is provided in the Contract Documents, the Contractor, within thirty (30) days 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. A shorter time for provision and approval of the submittal schedule may be designated in the Contract Documents and be applicable for smaller scope projects. The Contractor shall proceed at its own risk by performing any Work for which the Contract Documents require submittal review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.10.3 Upon review and acceptance by the Owner and the Architect of the Milestone Dates, the construction schedule shall be deemed part of the Contract Documents. If not accepted, the construction schedule shall be promptly revised by the Contractor in accordance with the recommendations of the Owner and the Architect and resubmitted for acceptance. The Contractor shall monitor the progress of the Work for conformance with the requirements of the construction schedule and shall promptly advise the Owner of any delays or potential delays. The accepted construction schedule shall be updated to reflect actual conditions. In the event any progress report indicates any delays, the Contractor shall propose an affirmative plan to correct the delay, including overtime and/or additional labor, if necessary. In no event shall any progress report constitute an adjustment in the Contract Time, any Milestone Date, or the Contract Sum unless any such adjustment is agreed to by the Owner and authorized pursuant to a written Change Order. The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.10.4 In the event the Owner or Architect determines that the performance of the Work has not progressed or reached the level of completion required by the Contract Documents, the Owner shall have the right to direct the Contractor to take corrective measures necessary to expedite the progress of construction, including, without limitations, (i) working additional shifts of overtime, (ii) supplying additional manpower, equipment and facilities, and (iii) other similar measures (hereinafter referred to collectively as "Extraordinary Measures"). Such Extraordinary Measures shall continue until the progress of the Work complies with the stage of completion

required by the Contract Documents. The Owner's right to require Extraordinary Measures is solely for the purpose of ensuring the Contractor's compliance with the construction schedule.

.1 The Contractor shall not be entitled to an adjustment in the Contract Sum in connection with Extraordinary Measures required by the Owner under or pursuant to this Subparagraph 3.10.5.

.2 The Owner may exercise the rights furnished the Owner under or pursuant to this Subparagraph 3.10.4 as frequently as the Owner deems necessary to ensure that the Contractor's performance of the Work will comply with any Milestone Date or completion date set forth in the Contract Documents.

§ 3.10.5 If required by Owner, Contractor shall also prepare and furnish project cash flow projections, manning data for critical activities, and schedules for the purchase and delivery of all critical equipment and material, together with periodic updating thereof.

§ 3.10.6 The Contractor shall recommend to the Owner and to the Architect a schedule for procurement of long-lead time items which will constitute part of the Work as required to meet the Project schedule. If such long-lead time items are procured by the Owner, they shall be procured on terms and conditions as recommended by the Contractor. Upon the Owner's execution of the Contract or GMP Amendment, all contracts previously entered into by Owner shall be assigned by Owner to the Contractor who shall accept responsibility for such contracts as if it had initially entered into such contracts. Contractor shall expedite the delivery of long-lead time items. The Contractor shall receive and protect all Owner supplied material.

§ 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.

§ 3.11.1 Upon request of the Owner, Contractor shall make available to the Owner, Architect, or their respective agents, for inspection and copying, at Contractor's offices during business hours and upon reasonable notice, job records, including, but not limited to, invoices, payment records, payroll records, daily reports, logs, diaries, and job meeting minutes, applicable to the Project.

§ 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. The Contractor shall proceed at its own risk by performing Work for which the Contract Documents require submittal review of Shop Drawings, Project 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, in writing, 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 written 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 (either a registered architect or professional engineer as provided below), 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 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 Contractor represents and warrants that all shop drawings shall be prepared by persons and entities possessing expertise and experience in the trade for which the shop drawings are prepared and if required by the Architect or applicable law, by a licensed engineer. The Owner and the Architect shall be entitled to rely upon the adequacy, completeness and accuracy of the services, certifications, and approvals performed or provided by such design professionals. 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. A registered architect or professional engineer, as applicable, must prepare drawings and specifications for all the Work, as governed by the Texas Occupations Code Chapter 1051; and a professional engineer must prepare plans, specifications and estimates for all Work governed by Texas Occupations Code Chapter 1001. In the event that Contractor retains a licensed design professional under the terms of this paragraph, Contractor shall require that the licensed design professional carry commercial general liability and errors and omissions insurance coverage in the same amounts and forms as required of the Architect on this Project. In the event that the licensed design professional retained by the Contractor will be conducting on-site services or observations, the licensed design professional shall also carry worker's compensation insurance and comprehensive automobile liability in the same amounts and forms as required of the Architect on this Project.

§ 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.

§ 3.12.10.3 The Architect's review of Contractor's submittals will be limited to one examination of an initial submittal and one (1) examination of a resubmittal. The Architect's review of additional submittals will be made only with the consent of the Owner after notification by the Architect. The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for evaluation of such additional resubmittals.

§ 3.13 Use of Site

§ 3.13.1 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. The Contractor shall so conduct its operations as not to unreasonably interfere with traffic on public thoroughfares adjacent or near to the Project site.

§ 3.13.2 Without prior approval of the Owner, the Contractor shall not permit any workers to use any of Owner's existing facilities at or adjacent to the Project site, including, without limitation, lavatories, toilets, entrance and parking areas other than those designated by the Owner. The Contractor shall comply with all rules and regulations promulgated by the Owner in connection with the use and occupancy of the Project site and the Building.

§ 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, provided however, that any such cutting, fitting, or patching can only be performed if the cutting, fitting or patching results in Work that is in accordance with the Contract Documents. 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 and shall, not less than two times each week, clean up by removing rubbish and waste, including old and surplus materials. On renovation projects, a complete site and building clean-up shall be accomplished each Friday leaving the site and building clean and orderly over the weekend. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials, and shall clean, sweep, mop, brush, vacuum and polish all ceramic, quarry and vinyl tile floors (vinyl floor tiles should not be waxed) and the interior of the improvements or renovated areas, including but not limited to, any floors, carpeting, ducts, fixtures, and ventilation units operated during construction. Clean all windows, inside and outside, clean all light fixtures, plumbing fixtures, and interior equipment, remove all non-permanent labels (excluding fire labels); wash and clean all paved and sidewalk areas and all landscaped areas. Contractor shall clean exterior gutters, drainage, walkways, driveways and roofs of debris.

§ 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.

§ 3.15.3 The Contractor shall exercise reasonable care not to damage any Owner property or facility whether existing or new. Contractor shall be fully responsible for such damage and shall promptly notify Owner of any such damage and promptly repair or replace same to the Owner's satisfaction at no cost to the Owner.

§ 3.16 Access to Work

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

§ 3.16.1 Upon request of the Architect or Owner's Representative, the Contractor shall accompany the Architect or Owner on an inspection of the Work.

§ 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 WAIVES AND RELEASES ALL CLAIMS AGAINST AND SHALL INDEMNIFY DEFEND AND HOLD HARMLESS THE OWNER, THE ARCHITECT, ARCHITECT'S CONSULTANTS, AND THE RESPECTIVE 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: (1) IS ATTRIBUTABLE TO BODILY INJURY, SICKNESS, DISEASE OR DEATH, OR TO INJURY TO OR DESTRUCTION OF TANGIBLE PROPERTY (OTHER THAN THE WORK ITSELF), INCLUDING THE LOSS OF USE RESULTING THEREFROM, AND (2) CAUSED IN WHOLE OR IN PART BY THE WILLFUL OR 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. HOWEVER, THE INDEMNITY PROVIDED FOR IN THIS SECTION SHALL HAVE NO APPLICATION TO ANY CLAIM, LOSS, DAMAGE, CAUSE OF ACTION, SUIT, OR LIABILITY WHERE THE INJURY, DEATH, OR DAMAGE RESULTS FROM THE SOLE NEGLIGENCE OF AN INDEMNIFIED PARTY UNMIXED WITH THE FAULT OF ANY OTHER PERSON OR ENTITY PROVIDING THIS INDEMNITY. WHERE THE NEGLIGENCE OF AN INDEMNIFIED PARTY IS A CONCURRING CAUSE, CONTRACTOR'S OBLIGATION TO INDEMNIFY IS LIMITED TO THE AMOUNT NECESSARY TO CAUSE THE RELATIVE LIABILITY OF OWNER, ARCHITECT AND CONTRACTOR TO REFLECT THE COMPARATIVE NEGLIGENCE FINDINGS OF THE TRIER OF FACT (JUDGE OR JURY) OR AS AGREED IN A SETTLEMENT AGREEMENT TO WHICH OWNER, ARCHITECT AND CONTRACTOR ARE ALL PARTIES. 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.

§ 3.18.3 THE DUTY TO DEFEND SET OUT ABOVE SHALL NOT APPLY IN THE EVENT THAT THE CLAIM IS BASED, IN WHOLE OR IN PART, ON THE NEGLIGENCE OF, FAULT OF, OR BREACH OF CONTRACT BY THE OWNER. NOTWITHSTANDING THE FOREGOING, THE CONTRACTOR AGREES TO REIMBURSE THE OWNER'S REASONABLE ATTORNEY'S FEES IN PROPORTION TO THE CONTRACTOR'S LIABILITY.

§ 3.18.4 CONTRACTOR SHALL BE RESPONSIBLE FOR AND SHALL HOLD OWNER, OWNER'S CONSULTANTS, ARCHITECT OR ARCHITECT'S CONSULTANTS FREE AND HARMLESS FROM LIABILITY RESULTING FROM LOSS OF OR DAMAGE TO CONTRACTOR'S OR ITS SUBCONTRACTORS' CONSTRUCTION TOOLS AND EQUIPMENT AND RENTED ITEMS WHICH ARE USED OR INTENDED FOR USE IN PERFORMING THE WORK, REGARDLESS OF WHETHER SUCH LOSS OR DAMAGE IS CAUSED IN WHOLE OR IN PART BY THE NEGLIGENCE OF OWNER, OWNER'S CONSULTANTS, ARCHITECT OR ARCHITECT'S CONSULTANTS. THIS PROVISION SHALL APPLY, WITHOUT LIMITATION, TO LOSS OR DAMAGE OCCURRING AT THE WORK SITE OR WHILE SUCH ITEMS ARE IN TRANSIT TO OR FROM THE WORK SITE AND IS IN ADDITION TO CONTRACTOR'S OBLIGATIONS UNDER SECTION 3.18.1. IT IS THE EXPRESS INTENTION OF THE PARTIES HERETO, BOTH CONTRACTOR AND OWNER, THAT THE INDEMNITY IS PROVIDED FOR IN THIS SECTION AS TO CONTRACTOR'S OR ITS SUBCONTRACTOR'S TOOLS AND EQUIPMENT AND RENTAL ITEMS, IS AN AGREEMENT BY CONTRACTOR TO INDEMNIFY AND PROTECT OWNER FROM THE CONSEQUENCES OF OWNER'S OWN NEGLIGENCE, AND THAT OF OWNER'S CONSULTANTS, THE ARCHITECT AND ARCHITECT'S CONSULTANTS WHETHER THAT NEGLIGENCE IS THE SOLE OR CONCURRING CAUSE OF THE LOSS OR DAMAGE. PROVIDED HOWEVER, THAT WHERE THE NEGLIGENCE OF OWNER OR ARCHITECT IS A CONCURRING CAUSE, CONTRACTOR'S

OBLIGATION TO INDEMNIFY IS LIMITED TO THE AMOUNT NECESSARY TO CAUSE THE RELATIVE LIABILITY OF OWNER, ARCHITECT AND CONTRACTOR TO REFLECT THE COMPARATIVE NEGLIGENCE FINDINGS OF TRIER OF FACT (JUDGE OR JURY) OR AS AGREED IN A SETTLEMENT AGREEMENT TO WHICH OWNER, ARCHITECT AND CONTRACTOR ARE ALL PARTIES.

§ 3.18.5 Indemnification hereunder shall include, without limiting the generality of the foregoing, liability which could arise to the Owner, its agents, consultants, and representatives or the Architect pursuant to State statutes for the safety of workmen and in addition, all Federal statutes and rules existing thereunder for protection, occupational safety and health to workmen. It being agreed that the primary obligation of the Contractor is to comply with said statutes in performance of the Work by Contractor and that the obligations of the Owner, its agents, consultants, and representatives under said statutes are secondary to that of the Contractor.

§ 3.18.6 It is agreed with respect to any legal limitations now or hereafter in effect and affecting the validity or enforceability of the indemnification obligations under Section 3.18 such legal limitations are made a part of the necessary to bring the provision into conformity with the requirements of such limitations, and as so modified, the indemnification obligations shall continue in full force and effect.

§ 3.18.7 Contractor shall promptly advise the Owner, in writing, of any claim or demand against the Owner or Contractor, known to the Contractor related to or arising out of Contractor's activities under this Contract.

§ 3.18.8 THE PROVISIONS OF ARTICLE 3.18 IN ITS ENTIRETY SHALL SURVIVE THE COMPLETION, TERMINATION OR EXPIRATION OF THIS CONTRACT.

§ 3.19 Representations And Warranties

§ 3.19.1 The Contractor represents and warrants the following to the Owner (in addition to the other representations and warranties contained in the Contract Documents), as an inducement to the Owner to execute this Contract, which representations and warranties shall survive the execution and delivery of the Contract and the Final Completion of the Work:

- **.1** that it is financially solvent, able to pay its debts as they mature and possessed of sufficient working capital to complete the Work and perform its obligations under the Contract Documents;
- **.2** that it is able to furnish the plant, tools, materials, supplies, equipment and labor required to complete the Work and perform its obligations hereunder and has sufficient experience and competence to do so;
- **.3** that it is authorized to do business in the State where the Project is located and properly licensed by all necessary governmental and public quasi-public authorities having jurisdiction over it and over the Work and the site of the Project;
- **.4** that the execution of the Contract and its performance thereof is within its duly authorized powers; and
- **.5** that its duly authorized representative has visited the site of the Work, familiarized itself with the local conditions under which the Work is to be performed and correlated its observations with the requirements of the Contract Documents.

§ 3.20 Business Standards

§ 3.20.1 Contractor, in performing its obligations under Contract, shall establish and maintain appropriate business standards, procedures, and controls, including those necessary to avoid any real or apparent impropriety or adverse impact on the interest of Owner or affiliates. Contractor shall review, with Owner, at a reasonable frequency during the performance of the Work hereunder, such business standards and procedures including, without limitation, those related to the activities of Contractor's employees and agents in their relations with Owner's employees, agents, and representatives, vendors, Subcontractors, and other third parties, and those relating to the placement and administration of purchase orders and contracts.

§ 3.21 Antitrust Violation

To permit the Owner to recover damages suffered in antitrust violations, Contractor hereby assigns to Owner any and all claims for overcharges associated with this Contract which violate the antitrust laws of the United States, 15 U.S.C.A. Section 1 et seq. The Contractor shall include this provision in its agreements with each subcontractor and supplier. Each subcontractor shall include such provisions in agreements with sub-subcontractors and suppliers.

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 [Paragraph Deleted.]

§ 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 Owner's contract with the Architect terminates. 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 inspections 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. The Contractor shall reimburse the Owner for compensation paid to the Architect, or to Owner's or Architect's Consultants, for additional site visits and/or testing made necessary by the fault, neglect or at request of the Contractor.

§ 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 or the Owner has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect or the Owner considers it necessary or advisable, the Architect or the Owner 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 or the Owner 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. Certain portions of the Work will be tested and/or observed at various stages, sometimes off the Project site, between initial observation or review and final positioning of the completed Work. Nothing in any initial or prior approval or test result shall govern if at any subsequent time the Work or any portion thereof is found not to conform to the requirements of the Contract Documents.

§ 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. If any submittal does not comply with the requirements of the Contract Documents, the Architect shall require Contractor to come into compliance. The Architect shall promptly report in writing to the Contractor and Owner any errors, inconsistencies and omissions discovered by the Architect in the Shop Drawings, Product Data and Samples, so as to keep from delaying the Work or the activities of the Owner, Contractor or other Contractors.

§ 4.2.8 The Architect will prepare and make written recommendations to Owner regarding all Change Orders AEA's, and Construction Change Directives, for the Owner's approval and execution in accordance with the Contract Documents. The Architect's recommendation shall be accompanied by all supporting documentation necessary for the Owner to make an informed decision, including but not limited to an itemized turn-key proposal from the Contractor which includes quantities and unit costs of labor and materials extended and totaled and if permitted, overhead and profit proposed. Prior to submission of such documentation to the Owner, the Architect shall review such proposals for reasonableness of pricing and compliance with section 7.1.4 regarding markup. The Architect may order minor changes in the Work not involving an adjustment in Contract Sum or Guaranteed Maximum Price, or an extension of the Contract Time which are consistent with the intent of the Contract Documents. If necessary, the Architect shall prepare, reproduce, and distribute Drawings and Specifications to describe Work to be added, deleted or modified, 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. The Architect is specifically not authorized to approve changes involving major systems such as: Mechanical, Electrical and Plumbing (MEP) systems: roof: foundation; outward appearance; color schemes; floor plans; building materials; drainage or mechanical equipment without Owner's prior written consent.

§ 4.2.9 The Architect and the Owner's representative will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion. Upon completion of such observations and agreement by the Owner and architect as to Substantial Completion, the Architect may 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 for approval by the Owner.

§ 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 Upon written request of the Contractor, the Architect will issue its interpretation of the requirements of the Specifications and Drawings and provide a response to all parties in accordance with the Contract Documents. 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.

§ 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 and not expressly overruled in writing by the Owner following review.

§ 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 Specifications and Drawings in response to the requests for information at no additional expense to the Owner.

§ 4.2.15 The Architect may appoint an employee or other person to assist the Architect during the construction. These representatives will be instructed to assist the Contractor in interpreting the Contract Documents; however,

such assistance shall not relieve the Contractor from any responsibility as set forth by the Contract Documents. The fact that the Architect's Representative may have allowed Work not in accordance with the Contract Documents shall not prevent the Architect from insisting that the faulty Work be corrected to conform to the Contract Documents and the Contractor shall correct same.

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 in writing 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 shall notify the Contractor in writing 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. A notice of no reasonable objection shall in no way relieve the Contractor from full responsibility for performance and completion of the Work and its obligations under the Contract Documents. The Contractor shall be fully responsible for the performance of its subcontractors, including those recommended or approved by the Owner.

§ 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.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected to perform Work on the Project or to supply materials to the Project, without providing a written notification of its intent to the Owner and Architect. If neither the Owner nor Architect, make reasonable objection to such proposed substitution within ten (10) days following the receipt of such notice, the Contractor may proceed with the substitution. If the Owner or Architect provide notice of reasonable objection to the proposed substitution, the provisions of Subparagraph 5.2.1 shall apply to the proposed 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.

§ 5.3.1 Neither the Owner nor the Architect shall be obligated to pay or to insure the payment of any monies to Subcontractors or vendors by the Contractor.

§ 5.3.2 The Contractor shall require any potential Subcontractor to disclose to the Contractor any business interest or familial relationship as those terms are defined by Chapter 176 of the Texas Local Gov't Code between the potential subcontractor and the Contractor, the Architect or the Owner. In addition, the potential Subcontractor shall be required by contract to report to Owner all such disclosures prior to entering into a contract and the Owner shall have the right, in its sole discretion, to reject any such potential Subcontractor.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for any unperformed 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 Article 14 or abandonment of the Project by the Contractor; and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and

.2 assignment is subject to the prior rights and obligations 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 may, in the Owner's sole discretion, 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 in the Owner's sole discretion further assign the subcontract to a successor contractor or other entity.

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 or Consultants retained by the Owner or Architect on behalf of 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.

§ 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.

§ 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 its Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction, however, such responsibility shall be limited only to a claim for extension of the Contract Time, properly filed and granted in accordance with Section 8.3 of these General Conditions.

§ 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 or Allowance Expenditure Authorization ("AEA") 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 (i.e. requiring a change in the GMP or Contract Sum) shall be based upon agreement among the Owner, Contractor, and Architect. Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An AEA shall be based upon an agreement between the Owner, Contractor and Architect, following review by the Architect and approval by the Owner's representative and designated by the Owner for payment from the Owner's Contingency and/or an Allowance. An AEA, may be funded in whole or in part from the Owner's Contingency. In the event sufficient funds do not remain in the Contingency, the Owner may in its sole discretion allow the additional changes to be funded by a change in the Contract Sum (or GMP, if applicable) which will require the execution of a Change Order. The Contractor will cooperate with the Owner to document the various portions of the change to be documented by AEA or Change Order. The source of payment will be at the sole discretion of the Owner. Further, the Owner shall have the absolute right to consolidate any Allowance into the Owner's Contingency in its sole discretion. The Architect shall have no authority to approve a Change Order or issue an order for any change in the Work, or expenditure of contingency funds to pay for a change in the Work, even if minor. All change Orders (including AEA's) must be approved by the Owner's designee in writing.

§ 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, AEA, Construction Change Directive, or order for a minor change in the Work.

§ 7.1.4 On Change Orders, Construction Change Directives to the extent not paid from an Allowance or Contingency, the total Contractor mark-up for overhead and profit included in the total cost to the Owner and proposed in any Price Proposal, shall be based upon the following schedule:

.1 For a General Contractor (procured through CSP) fifteen percent (15%) of the cost of the Work.

.2 For the CMAR, for Work performed by the CMAR's own forces the difference between the CMAR's Fee Percentage and fifteen percent (15%) of the cost of the Work.

.3 For the CMAR, for the Work performed by the CMAR's Subcontractors or those subcontractors' employees, five percent (5%) of the amount due the Subcontractors

.4 For each Subcontractor or Sub-subcontractor involved, for Work performed by that Subcontractor's or Sub-subcontractor's own forces, fifteen percent (15%) of the cost of the Work.

.5 The costs to which the above percentages shall be applied will be determined in accordance with Section 7.2.4 or 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 quantities and unit costs of labor and materials extended and totaled.

§ 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.

§ 7.2.2 Pricing Procedure for Change Order or Allowance Expenditure Authorization.

§ 7.2.2.1 Within ten (10) working days after the date that the Architect finds cause for additional work, the Architect shall submit a Proposal Request to the Contractor requesting pricing for the required work, including specific information, drawings and/or specifications related to the Work to be priced.

§ 7.2.2.2 Within ten (10) working days the Contractor shall provide a detailed labor and material breakdown of the proposed pricing for the Work specified in the Proposal Request ("Price Proposal"). Labor costs shall be broken down by man hours and include hourly rates and labor burden. Materials shall include all quantities, units and unit prices.

§ 7.2.2.3 A Price Proposal for a Change Order shall include charges for overhead and profit (subject to the limitations set out in Section 7.1.4).

§ 7.2.2.4 A Price Proposal for an AEA, indicated to be paid from Contingency or an established Allowance shall not include charges for overhead and profit in the Price Proposal, since these amounts have already been included in the Contingency or Allowance, a part of the Contract Sum or GMP.

§ 7.2.2.5 Within ten (10) working days after the Architect's receipt of the Contractor's Price Proposal, the Architect shall either forward the Price Proposal to the Owner's Representative with a recommendation for acceptance or return the Price Proposal to the Contractor with instructions describing further information needed or action required for acceptance. Contractor's subsequent response shall be provided to the Architect in no more than ten (10) working days from its receipt of the Architect's response.

§ 7.2.2.6 Upon receipt of the Contractor's Change Order Proposal signed by the Architect, the Owner's Representative will submit the Change Order to the required authority established by Board Policy CV(Local). Change orders, additions, or credits that total less than $15,000 may be approved and signed by the Executive Director of Facilities Construction. Change orders that total $15,000 or more, but less than $50,000, may be approved and signed by the Assistant Superintendent for Facilities and Operations and/or the Deputy Superintendent for Business and Support Services. Change orders totaling $50,000 or more, or that exceed the Contract Sum, may be approved only by Board action. If Board approval is required, the Change Order shall be submitted to the Board of Trustees for action at the next scheduled Board Meeting, to the extent reasonably possible. If a Proposal is returned to either the Architect or Contractor, for changes or other action by the Contractor, subsequent responses shall be due to the Owner's Representative within ten (10) working days.

§ 7.2.2.7 Once the Price Proposal is approved by either the Owner's Designate or Board, as required, the Owner's Designate will direct the Architect to issue a final AEA or Change Order incorporating the Price Proposal for execution by all parties.

§ 7.2.3 Acceptance of a disbursement from any Allowance fund, Contingency fund or acceptance of a Change Order

by the Contractor shall constitute full accord and satisfaction for any and all claims, whether direct or indirect, including but not limited to impact, delay or acceleration damages, arising from the subject matter of the disbursement or Change Order.

§ 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, and proposing an adjustment to the Contract Sum and/or Contract Time or both as it deems appropriate.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order. Upon receipt of a Construction Change Directive, the Contractor shall immediately proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the amount of, or method provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time, not later than three (3) days after Contractor's receipt of the Construction Change Directive.

§ 7.3.3 If the Construction Change Directive proposes an adjustment to the Contract Sum and/or the Contract Time, 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.

§ 7.3.4 If a Construction Change Directive proposes payment from an established Contingency or Allowance the Construction Change Directive may be converted to an AEA and pricing shall be established by mutual agreement of the parties with no mark-up as provided in Section 7.2.2

§ 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. No payment will be made on the Change Directive pending agreement on pricing and conversion to a written Change Order or AEA.

§ 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 in writing, 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, Guaranteed Maximum Price, if any or Contract Time. Such written notice shall be provided no later than three (3) Working Days after Contractor's receipt of the Construction Change Directive and shall be a condition precedent to assertion of any Claim related to adjustment of the 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 converted to a Change Order or an AEA.

§ 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. 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 No time extension will be considered for delay in commencement during negotiation of a Construction Change Directive, and no payment will be made until a valid Change Order or AEA has been executed and no interim payment shall be made based on performance under a Construction Change Directive during negotiations.

§ 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 or AEA to memorialize the Agreement. Change Orders or AEAs may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

With prior written notice to the Owner's representative, 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 Guaranteed Maximum Price, as applicable, 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, the Guaranteed Maximum Price, as applicable, 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, the Guaranteed Maximum Price, as applicable, or Contract Time, the Contractor waives any adjustment to the Contract Sum, the Guaranteed Maximum Price, as applicable, or extension of the Contract Time. The Contractor shall carry out such written orders promptly.

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 shall be the first Working Day following the Contractor's written notice to proceed. The notice to proceed shall not be issued until the Agreement or Guaranteed Maximum Price Amendment, as applicable, has been signed by the Contractor and the Owner, the Owner and Architect have received and approved as to form all required payment and performance bonds and insurance as required by Article 11.Contractor shall not be entitled to any delay days for any period between the Contractor's receipt of the Notice of Award and the Contractor's receipt of the Notice to Proceed. The Contractor must anticipate that the Contractor may not receive the Notice to Proceed until 60 to 120 days after the Contractor's receipt of the Notice of Award. This is a period for Owner's convenience and may not be required in all cases. It is most often associated with any delay which might occur in receipt of a building permit from the local authority having jurisdiction.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect and the Owner in accordance with Section 9.8. The date of Final Completion is the date certified by the Architect in accordance with Section 9.10. Unless otherwise agreed in writing by Owner, Contractor agrees that Final Completion shall occur not more than thirty (30) days after the date of Substantial Completion.

§ 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 stipulates 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. The date of commencement of the Work shall not be changed by the effective date of such insurance.

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

§ 8.2.4 Liquidated Damages

§ 8.2.4.1 If the Contractor fails to achieve Substantial Completion of the Work within the Contract Time, the Owner shall be entitled to retain or recover from the Contractor and the Contractor's surety, as liquidated damages and not as a penalty, the per diem amounts set out in the AIA Document A101 (2017) or the AIA Document A133 (2019) into which these General Conditions are incorporated and executed concurrently with these General Conditions, commencing upon the first day following expiration of the Contract Time and continuing until the actual Date of Substantial Completion. Such liquidated damages are hereby agreed to be a reasonable estimate of damages the Owner will incur as a result of delayed completion of the Work.

§ 8.2.4.2 In the event Substantial Completion is not achieved by the designated date, or as it may be extended, Owner may withhold payment of any further sums due until Substantial Completion is achieved. Owner shall also be

entitled to deduct out of any sums due to Contractor all liquidated damages, if any, due Owner in accordance with the Contract Documents.

§ 8.2.4.3 In addition to Liquidated Damages, if any, the Contractor shall reimburse the Owner for any Supplemental or Additional Services of the Architect for additional site visits made necessary by the fault, neglect or request of the Contractor or caused by Contractor's failure to achieve the applicable Contract Time requirements.

§ 8.2.5 If one or more of the Liquidated Damages provisions set out in the Agreement are held to be legally unenforceable as a penalty (except when the holding is the result of a challenge by the Owner), the Owner shall be allowed to recover actual damages caused by the Contractor's failure to achieve the applicable Contract Time requirements.

§ 8.2.6 In addition to Liquidated Damages, if any, the Contractor shall reimburse the Owner for any Supplemental or Additional Services of the Architect for additional site visits made necessary by the fault, neglect or request of the Contractor or caused by Contractor's failure to achieve the applicable Contract Time requirements.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 Except as provided for in this Section 8.3.1, the Owner shall not be liable to the Contractor for damages due to the delay to the Contractor's Work by the act, neglect or default of the Owner or the Architect, because of changes ordered in the Work or because of strikes, lockouts, fire, unusual delay in transportation, unavoidable casualties, unusual inclement weather, or other causes beyond the Contractor's control which constitute a justifiable delay, the Contract Time may be extended, as the Contractor's sole and exclusive remedy for such delay. Extended general conditions (or any other amounts) will not be considered or paid for extensions of time. The cost of performance bonds and payment bonds, whether procured by the Contractor or any subcontractor, is included in neither the Contractor's overhead and profit, nor the General Conditions.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Section15.1.6.

§ 8.3.3 This Agreement does not permit recovery of damages for delay by the Contractor for any delay, disruption or acceleration. Contractor agrees that Contractor shall be fully compensated for all delays solely by an extension of time.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement or Guaranteed Maximum Price Amendment, as applicable, and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents. All costs of overtime Work required by the Contract Time and the nature of the Work, as set forth in or inferable from the Contract Documents, shall be and are included in the Contract Sum. The Contract Sum shall not be increased because the Contractor experiences an unexpected or unforeseeable increase in the price of labor or materials required to complete the Project.

§ 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 may be equitably adjusted by written agreement between the Owner and Contractor, executed prior to an order being placed based on the unit prices.

§ 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 Draft Submission. At least seven (7) calendar days before the date established for the Project Meeting when the Contractor's Application For Payment is set for review, the Contractor shall submit to the Architect a draft of its 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 submitted draft shall be supported by such data substantiating the Contractor's right to payment as is required by the Owner, the Architect or the Contract Documents, including but not limited to copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage. The form of Application for Payment, duly notarized, shall be a current authorized edition of AIA Document G702-1992, Application and Certificate for Payment and Continuation Sheet.

§ 9.3.1.1. Such applications may include requests for payment on account of changes in the Work that have been properly authorized by Change Order or AEA and performed or delivered during the period represented by the Application for Payment. Applications for Payment including requests for payment under a Change Order or AEA shall include copies of the approved Change Orders and AEA's on which payment is requested.

§ 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 Contractor agrees that, for purposes of Texas Government Code section 2251.042, receipt of the Application for Payment by the Architect shall not be construed as receipt of an invoice by the Owner. Contractor further agrees that Owner's receipt of the Architect's Certificate for Payment shall be construed as a receipt of an invoice by the Owner, for purposes of Texas Government Code section 2251.042.

§ 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 by the Owner, in advance and in writing, payment may be authorized for materials and equipment suitably stored off the site at a location agreed upon in writing by the Owner and Contractor. 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. As a condition precedent to the grant of consent for payment for off-site stored material or equipment, Contractor must comply with the following procedures and requirements:

.1 Contractor must submit an affidavit identifying material and equipment, providing photographic evidence of material and equipment, and acknowledging responsibility for the material and equipment.

.2 With each monthly request for payment, Contractor must submit a report to the Architect and Owner listing the material and equipment already paid for and still stored off site, including photographic evidence of same.

.3 Upon request of Architect or Owner, provide warehouse and photographic records, receipts and invoices to verify quantities and their disposition.

.4 Material and equipment must be stored in a bonded warehouse in Bexar County

.5 Material and equipment must be stored in accordance with manufacturer's instructions, including proper temperature and humidity controls.

.6 Material and equipment must be physically separated and marked for the Project.

.7 Material and equipment must be inspected at the warehouse by the Architect or Owner who must be satisfied with the security, control, maintenance and preservation measures. Architect and Owner may inspect the material and equipment at any time during normal warehouse hours.

.8 Contractor must, at no cost to the Owner, provide insurance coverage adequate not only to cover material and equipment while in storage, but also in transit from the off-site storage warehouse to the Project site. Upon request, provide documentation of such coverage.

.9 The Owner reserves the right to reject material and equipment which do not meet Contract requirements regardless of any payment previously made.

.10 In the event of termination of the Contract or default by the Contractor, the material and equipment stored off site must be immediately turned over to the Owner by delivery to the Project site or other location determined by the Owner.

§ 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. **CONTRACTOR SHALL INDEMNIFY AND HOLD OWNER HARMLESS FROM ANY LIENS, CLAIMS, SECURITY INTERESTS OR ENCUMBRANCES FILED BY THE CONTRACTOR, SUBCONTRACTORS, OR ANYONE CLAIMING BY, THROUGH OR UNDER THE CONTRACTOR OR SUBCONTRACTOR FOR ITEMS COVERED BY PAYMENTS MADE BY THE OWNER TO CONTRACTOR.**

§ 9.3.4 At the Project Meeting at which the Contractor's Application For Payment is set for review the Contractor shall provide three (3) original of the Application for Payment with any changes required by the Architect at the prior meeting, incorporated therein. The submitted Applications for Payment shall be complete and notarized, and supported by such data substantiating the Contractor's right to payment as is required by the Owner, the Architect and the Contract Documents, including but not limited to copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage held by the Owner. During the meeting, the Architect, Owner and Contractor shall review the submitted Application for Payment, along with the required documentation, updated schedule, affidavit of bills paid and releases of lien. If all is found to be in order, the Architect shall certify all or the acceptable portion of the original and copies of the Contractor's Application for Payment and hand deliver them to the Owner's Project Manager at the conclusion of the meeting. Following the Project Meeting, the Owner's Project Manager shall deliver the original of the Contractor's Application for Payment to the Facilities and Operation Office in-house accounting department for processing. Should any part of the Application For Payment or other submissions, be found to contain errors or require further amendment, or the Architect, for one of the reasons outlined in Section 9.5 withholds certification of all or part of an Application for Payment, the Application For Payment will be returned to the Contractor at the conclusion of the meeting, and it shall be the Contractor's responsibility to remedy any defects that prevented certification and deliver the corrected documents to the Architect for review and certification.

§ 9.3.5 Timeline for Submission and Payment. Provided that the Contractor's Application for Payment is reviewed in accordance with Section 9.3.4, payment is certified by the Architect, and the Contractor's Application for Payment is delivered to the District's in-house accounting personnel for processing no later than the last Wednesday of the month, the Owner shall make payment to the Contractor not later than fifteen (15) days after receipt by the District's in-house accounting personnel. If a Contractor's Application for Payment, certified by the Architect is received by the Owner's in-house accounting department after the last Wednesday of the month, payment shall be made by the Owner not later than the fourth Friday of the following month after receipt of the properly certified Contractor's Application for Payment.

§ 9.3.6 Except as otherwise agreed in writing, executed by the Owner and Contractor prior to delivery of material and equipment, the Contractor is not entitled to payment for material and equipment delivered and stored on site or off site. The Owner may, in the Owner's sole discretion, agree to make payment for materials stored on site or off site and may, as a condition precedent to the grant of such consent, establish reasonable procedures and requirements (including provision of additional insurance at Contractor's sole expense) with which Contractor must comply

§ 9.3.7 In each Request for Payment, Contractor shall provide a completed and executed AIA Document G706A™-1994, Contractor's Affidavit of Release of Liens, certifying that there are no known mechanics' or materialmens' liens outstanding at the date of the requisition, and an AIA Document G706™-1994, Contractor's Affidavit of Payment of Debts and Claims, certifying that all due and payable bills with respect to the Work have been paid to date or are included in the amount requested in the current application and that except for such bills not paid but so included, there is no known basis for the filing of any mechanics' or materialmens' liens on the Work, and that releases from all contractors and materialmen have been obtained in such form as to constitute an effective release of lien under the laws of the State of Texas covering all Work theretofore performed and for which payment has been made by Owner to Contractor.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, using the procedure outlined in Section 9.3 (and subsections) above, , 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 or the Owner 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;
- **.7** repeated failure to carry out the Work in accordance with the Contract Documents.
- **.8** delay beyond the times set forth elsewhere in the Contract Documents including but not limited to the submission for approval of the schedule of values, cost breakdowns on proposal requests, progress schedule, list of Subcontractors and insurance requirements;
- **.9** failure to submit a written plan indicating action by the Contractor to regain the time schedule for completion of Work within the Contract Time;
- **.10** evidence of financial inability to perform the Contract fully;
- **.11** failure to submit record documents required by the Contract; or
- **.12** failure of the Contractor to perform any other obligations of the Contract.

§ 9.5.2 If the Contractor disputes the Architect's or the Owner's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, the Contractor 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. The Owner shall not be deemed in default by reason of withholding payment as provided for in Section 9.5.1.

§ 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 and the Owner has approved a Certificate for Payment, the Owner shall make payment of undisputed amounts in the manner and within the time provided in the Contract Documents and shall so notify the Architect. of any disputed amounts. Owner shall notify Contractor within twenty-one (21) days if Owner disputes the Architect's Certificate for Payment, pursuant to Texas Government Code section 2251.042 *et. seq.*, listing the specific reasons for nonpayment. Payments to the Contractor shall not be construed as releasing the Contractor or his Surety from any obligations under the Contract Documents.

§ 9.6.2 The Contractor shall, within ten (10) days following receipt of payment from the Owner, pay all undisputed bills for labor and materials performed and furnished by others in connection with the construction, furnished and equipping of the improvements and the performance of the Work, and shall, if requested, provide the Owner with evidence of such payment. Contractor's failure to make payments within such time shall constitute a material breach of this contract. Contractor shall include a provision in each of its contracts imposing the same payment obligations on its Subcontractors as are applicable to the Contractor hereunder. If the Contractor has failed to make payment promptly to the Contractor's Subcontractors or for materials or labor used in the Work for which the Owner has made payment to the Contractor, the Owner shall be entitled to withhold payment to the Contractor in part or in whole to the extent necessary to protect the Owner.

§ 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 to the Subcontractors and suppliers the 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 [Paragraph Deleted.]

§ 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 (7) days after the date established in the Contract Documents, the amount certified by the Architect and approved by the Owner, then the Contractor may, upon seven (7) 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; provided, however, as a condition precedent to Substantial Completion, the Owner has received all certificates of occupancy and any other permits, approvals, licenses, and other documents from any governmental authority having jurisdiction thereof necessary for the beneficial occupancy of the Project (or if the same cannot be delivered for reasons not the fault or responsibility of the Contractor, nevertheless all Contractor's obligations necessary to the issuance of such certificates, permits, approvals, or licenses will have been performed.) Without limiting the foregoing, in general, the only remaining Work following Substantial Completion shall be minor in nature, so that the Owner could occupy the Project on that date and the completion of the Work by the Contractor would not materially interfere or hamper the Owner's normal business operations.

§ 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 and the Owner will review the list prepared by the Contractor. If such list is found acceptable the Owner and 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.

.1 If, in Architect's opinion during the inspection, the Project, or the designated portion thereof which Owner has agreed to accept separately, is not sufficiently complete to warrant inspection, or if the list of items to be completed or corrected is not sufficiently complete to warrant inspection, then Architect may terminate the inspection and notify the Contractor that the Project is not ready for inspection. If for such reasons, Architect is required to make additional inspections, the Owner may deduct the cost of Architect's additional services made necessary thereby from any payments due the Contractor. The Architect's compensation shall be determined in accordance with the applicable provisions of the Agreement between the Owner and Architect.

.2 Except with the consent of the Owner, the Architect will perform no more than ONE (1) inspection to determine whether the Work has attained Substantial Completion in accordance with the Contract Documents. The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect, Engineer, Consultant or service provider 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. The payment shall be sufficient to increase the total payments to 95 percent of the Contract Sum, less amounts as the Architect shall determine for all incomplete Work and unsettled claims.

§ 9.8.6 Retainage is not due to the Contractor until thirty-one (31) days after Final Completion of the Work as set out in Section 9.10. After the Certificate of Substantial Completion is accepted by the Owner, the Owner may, in its sole discretion and upon acceptance and consent of surety, make payment of retainage on all or a part of the Work accepted.

§ 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, in writing, and authorized by public authorities having jurisdiction over the Project. Such consent shall be obtained by the Contractor and provided to the Owner, unless the Contractor is not in privity with the insurer. If the Owner is the party holding the insurance at the time of occupancy it shall be responsible for obtaining such consent. 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 expressly agreed in writing, 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 When all of the Work is finally completed, and the Contractor is ready for a final inspection the Contractor shall notify the Owner and the Architect thereof in writing. Thereupon, the Architect and Owner will make final inspection of the Work and, if the Work is complete in full accordance with the Contract Documents and this Contract has been fully performed, the Architect will promptly issue a final Certificate for Payment certifying to the Owner that the Project has been completed in accordance with the Contract Documents and that the Contractor is entitled to the remainder of the unpaid Contract Sum, less any amount withheld pursuant to this Contract. 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. Except with the consent of the Owner, the Architect will perform no more than one (1) inspection to determine whether the Work has attained Final Completion in accordance with the Contract Documents. If the Architect is unable to issue its final Certificate for Payment and is required to repeat its final inspection of the Work, the Contractor shall bear the cost of such repeat final inspection(s) which cost may be deducted by the Owner from the Contractor's final payment.

§ 9.10.2 The Contractor shall not be entitled to final payment or any remaining retained percentage unless and until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other liabilities connected with the Work for which the Owner or the Owner's property might be responsible have been paid or otherwise satisfied, (2) evidence satisfactory to the Owner 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 relating to materials, equipment and labor used in the Work or specific Subcontractor warranties, and (6) except for amounts previously withheld 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; (7) In addition, the following items must be completed and delivered to the Owner before Final Payment will be due:

.1 Written certifications required by Sections 10.5, 10.6, and 10.7 herein;
.2 Final list of subcontractors (AIA Document G705);
.3 Contractor's Certification of Project Compliance required by 16 Texas Administrative Code, Section 61.1036, located at: https://tea.texas.gov
.4 Contractor's warranties, organized as required elsewhere in the Contract Documents;
.5 Maintenance and Instruction Manuals;
.6 Owner's Certificate of Final Completion; and

.7 "As-constructed record drawings". At the completion of the Project, the Contractor shall submit one complete set of "as-constructed" record drawings, with all changes made during construction, including concealed mechanical, electrical, and plumbing items. The Contractor shall submit these as electronic, sepia, or other acceptable medium, in the discretion of the Owner. The "as-constructed" record drawings shall delete the seal of the Architect and/or the Engineer and any reference to those firms providing professional services to the Owner, except for historical or reference purposes

.8 Any other close-out deliverables required by the Owner's Special Conditions.

§ 9.10.3 The Owner shall make final payment of all sums due the Contractor not more than thirty-one (31) days after the Architect's execution of a final Certificate for Payment, including certifications that all close out deliverables required by Section 9.10.2 have been delivered by the Contractor and all conditions precedent to Final Payment required by the Contract Documents satisfied. The Final Payment shall not constitute a waiver of any claims by the Owner.

§ 9.10.4 [Paragraph Deleted.]

§ 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 In addition to any liquidated damages payable to the Owner by the Contractor, if: (1) the Architect is required to make more than one (1) inspection for Substantial Completion; (2) the Architect is required to make more than 1 inspection for Final Completion; or (3) the Work is not substantially complete within thirty (30) days after the date established for Substantial Completion in the Contract Documents; the Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for any additional inspections or services.

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.

.1 Contractor's employees, agents, and Subcontractors shall not perform any service for Owner while under the influence of alcohol or any controlled stance. Contractor, its employees, agents, and Subcontractors shall not use, possess, distribute, or sell illicit or unprescribed controlled drugs or drug paraphernalia, or misuse legitimate prescription drugs while performing the Work. Contractor, its employees, agents, and Subcontractors shall not use, possess, distribute, or sell alcoholic beverages while performing the Work.

.2 Contractor has adopted or will adopt its own policy to assure a drug and alcohol-free work place while performing the Work.

.3 Contractor will remove any of its employees from performing the Work any time there is suspicion of alcohol and/or drug use, possession, or impairment involving such employee, and at any time an incident occurs where drug or alcohol use could have been a contributing factor. Owner has the right to require Contractor to remove employees from performing the Work any time cause exists to suspect alcohol or drug use. In such cases, Contractor's employees may only be considered for return to work after the Contractor certifies as a result of a for-cause test, conducted immediately following removal that said employee is in compliance with this contract. Contractor will not use an employee to perform the Work who either refuses to take, or tests positive in, any alcohol or drug test.

.4 Contractor will comply with all applicable federal, state, and local drug and alcohol related laws and regulations (e.g., Department of Transportation regulations, Department of Defense Drug-Free Workforce Policy, Drug-Free Workplace Act of 1988).

.5 Owner has also banned the presence of all weapons on the Project site, whether the owner thereof has a permit for a concealed weapon or not.

.6 THE CONTRACTOR RELEASES, INDEMNIFIES AND HOLDS HARMLESS THE OWNER FOR CONTRACTOR'S FORCES' NON-COMPLIANCE WITH OWNER'S DRUG-FREE, ALCOHOL-FREE, WEAPON-FREE, HARASSMENT-FREE, AND TOBACCO-FREE ZONES, CONTRACTOR'S FORCES' NON-COMPLIANCE WITH CRIMINAL LAW, OR CONTRACTOR'S OR CONTRACTOR'S FORCES' NON-COMPLIANCE WITH IMMIGRATION LAW OR REGULATIONS.

§ 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, school personnel, students and other persons on the Owner's premises and other persons who may be affected thereby, which protection shall include the installation of fencing between the Work site and the occupied portion of a connecting or adjacent educational facility;

.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 fences, trees, shrubs, lawns, walks, athletic fields and tracks, 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. The Contractor shall also be responsible, at the Contractor's sole cost and expense, for all measures necessary to protect any property adjacent to the Project and improvements therein. Any damage to such property or improvements shall be promptly repaired by the Contractor. Contractor shall provide reasonable fall protection safeguards and provide approved fall protection safety equipment for use by all exposed Contractor employees.

§ 10.2.4 When use or storage of 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 and shall only conduct such activities after giving reasonable advance written notice of the presence or use of such materials, equipment or methods to Owner and Architect. The storage of explosives on Owner's property is prohibited. The use of explosive materials on Owner's property is prohibited unless expressly approved in advance in writing by Owner and Architect.

§ 10.2.5 CONTRACTOR SHALL HOLD OWNER HARMLESS FROM LIABILITY RESULTING FROM LOSS OF OR DAMAGE TO ANY PROPERTY THAT IS ON OR OFF THE SITE AND/OR IN TRANSIT AS REFERRED TO IN CLAUSE 10.2.1.2 EVEN IF SUCH LOSS OR DAMAGE RESULTS FROM OWNER, OWNER'S CONSULTANT'S, OR ARCHITECT'S NEGLIGENCE. AS TO PROPERTY REFERRED TO IN CLAUSE 10.2.1.3, CONTRACTOR SHALL HOLD OWNER FREE AND HARMLESS FROM LIABILITY RESULTING FROM LOSS OF OR DAMAGE CAUSED IN WHOLE OR IN PART BY THE CONTRACTOR, ANY SUBCONTRACTOR, ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY ANY OF THEM, ANYONE FOR WHOSE ACTS ANY OF THEM MAY BE LIABLE, REGARDLESS OF WHETHER OR NOT SUCH DAMAGE IS CAUSED IN PART BY THE NEGLIGENT ACTS OR OMISSIONS OF THE OWNER, OWNER'S CONSULTANTS OR ARCHITECT. THE FOREGOING OBLIGATIONS OF THE CONTRACTOR ARE IN ADDITION TO HIS OBLIGATIONS UNDER SECTION 3.18; PROVIDED THAT WHERE THE NEGLIGENCE OF OWNER OR ARCHITECT IS A CONCURRING CAUSE, CONTRACTOR'S OBLIGATION TO INDEMNIFY IS LIMITED TO THE AMOUNT NECESSARY TO CAUSE THE RELATIVE LIABILITY OF OWNER, ARCHITECT AND CONTRACTOR TO REFLECT THE COMPARATIVE NEGLIGENCE FINDINGS OF THE TRIER OF FACT (JUDGE OR JURY) OR AS AGREED IN A SETTLEMENT AGREEMENT TO WHICH OWNER, ARCHITECT AND CONTRACTOR ARE ALL PARTIES.

§ 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 three (3) days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter. No provision of the Contract Documents

shall waive Owner's immunity under the Texas Tort Claims Act, Texas Civil Practice and Remedies Code, Chapter 101.

§ 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 [Paragraph Deleted.]

§ 10.3.4 [Paragraph Deleted.]

§ 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 [Paragraph Deleted.]

§ 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.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance

§ 11.1.1 Prior to performing work under this Agreement, the Contractor shall purchase and thereafter maintain in force and effect, insurance of the kinds and with indemnification limits not less than the amounts indicated below, to protect Owner and the Contractor from property and casualty damage to the Project Site and any approved temporary storage location, claims arising out of negligent or intentional acts or omissions of the Contractor its subcontractors, or anyone directly or indirectly employed or controlled by any of them (hereinafter collectively referred to as "Contractor") in performing the Work of this Agreement.

§ 11.1.1.1 **Employer's Liability Insurance.** Contractor shall purchase and maintain Employer's Liability insurance with policy limits not less than:

.1 One Million Dollars ($1,000 000) each accident
.2 One Million Dollars ($1,000,000) each employee
.3 One Million Dollars ($1,000 000) policy limit.

§ 11.1.1.2 **Commercial General Liability Insurance.** Contract shall purchase and maintain Commercial General Liability insurance providing coverage for claims including:

- **.a** damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;
- **.b** personal and advertising injury;
- **.c** damages because of physical damage to or destruction of tangible property, including the loss of use of such property;
- **.d** bodily injury or property damage arising out of completed operations; and
- **.e** the Contractor's indemnity obligations under Section 3.18.

§ **11.1.1.2.1** The Commercial General Liability insurance shall have policy limits of not less than:

- .a One Million Dollars ($1,000 000) each occurrence;
- .b Two Million Dollars ($2,000,000) general aggregate (for which a Designated Construction Project General Aggregate Limit shall be provided);
- .c One Million Dollars ($1,000,000) each person for personal and advertising injury;
- .d One Million Dollars ($1,000,000) each occurrence for Products and Completed Operations;
- .e Two Million Dollars ($2,000,000) Products and Completed Operations General Aggregate (for products complete operations hazard [for one (1) year, commencing with issuance of final Certificate for Payment).
- .f One Million Dollars ($1,000,000) for independent contractors property damage each occurrence;
- .g Two Million Dollars ($2,000,000) for contractual liability property damage aggregate.

§ 11.1.1.2.2 The Commercial General Liability policy shall not contain an exclusion or restriction of coverage for the following:

- **.1** Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.
- **.2** Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor.
- **.3** Claims for bodily injury other than to employees of the insured.
- **.4** Claims for indemnity under Section 3.18 arising out of injury to employees of the insured.
- **.5** Claims or loss excluded under a prior work endorsement or other similar exclusionary language.
- **.6** Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.
- **.7** Claims related to residential, multi-family, or other habitational projects, if the Work is to be performed on such a project.
- **.8** Claims related to roofing, if the Work involves roofing.
- **.9** Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces.
- **.10** Claims related to earth subsidence or movement, where the Work involves such hazards.
- **.11** Claims related to explosion, collapse and underground hazards, where the Work involves such hazards.___

§ 11.1.1.3 **Automobile Liability Insurance.** Contractor shall purchase and maintain Automobile Liability for bodily injury, death of any person, and property damage arising out of the ownership, maintenance, and use of those motor vehicles along with any other statutorily required automobile coverage, covering vehicles owned by the Contractor and non-owned vehicles used by the Contractor with the following policy limits not less than:

- .1 One Million Dollars ($1,000,000) combined single limit
- .2 One Million Dollars ($1,000,000) per accident

§ 11.1.1.4 **Umbrella or Excess Insurance.** Contractor shall purchase and maintain Umbrella or Excess Insurance in the amount of Five Million Dollars ($5,000,000) each occurrence/aggregate

§ 11.1.1.5 **Builder's Risk Insurance.** Contractor shall purchase and maintain Builder's Risk Insurance on an "All Risk" completed value form sufficient to cover the total value of the entire Project Site plus the value of subsequent Modifications and labor performed and materials or equipment supplied by others, on a replacement costs basis. If

Contractor is a Construction Manager at Risk, then the amount of Builder's Risk insurance coverage shall be an amount equal to the Guaranteed Maximum Price. Such policy shall include an endorsement allowing occupancy of the Project, in part or whole, by the Owner prior to final completion of construction. The coverage, if not included in the base "All Risk" coverage shall:

.1 name the Owner as the Loss Payee on the policy;

.2 provide coverage for direct physical loss or damage resulting from all perils, and shall not exclude the risks of fire, lightning, explosion, theft, vandalism, malicious mischief, collapse, earthquake, hurricane, flood, or windstorm

.3 provide coverage for ensuing loss or resulting damage from error, omission, or deficiency in construction methods, design, specifications, workmanship, or materials,

.4 provide protection on a full replacement cost basis for boiler and machinery equipment during installation, during testing, and until acceptance by Owner,

.5 cover debris removal, including demolition occasioned by enforcement of any applicably legal requirements,

.6 cover reasonable compensation for the Architect's and Contractor's services and expenses required as a result of such insured loss, including claim preparation expenses,

.7 provide coverage for loss or damage to falsework and other temporary structures, and to building systems from testing and startup,

.8 include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project as insureds, including but not limited to protection of 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.

.9 provide coverage for Employee Theft or Dishonesty, including Third Parties, and if not provided by the base coverage, the Contractor shall obtain separate coverage sufficient to protect Owner's interest, and in an amount agreeable to Owner.

.10 provide coverage for loss of use of Owner's property or the inability of Owner to conduct normal operations due to fire or other causes of loss.

.11 provide coverage for direct physical loss or damage resulting from all perils, and shall not exclude the risks of fire, lightning, explosion, theft, vandalism, malicious mischief, collapse, earthquake, hurricane, flood, or windstorm at approved temporary off site storage locations and while in transit as referenced in Owner's Special Conditions Attachment P.

Unless the requirement for the Contractor maintain Builder's Risk insurance is released by the Owner, in writing, coverage shall be maintained by the Contractor until Final Payment is made to the Contractor or expiration of the period for correction of the Work set forth in Section 12.2 whichever is later.

If the Contractor is unable to purchase and maintain the Builder's Risk insurance required herein, the Contractor shall inform the Owner in writing prior to commencement of the Work. Upon receipt of notice from the Contractor, the Owner may delay commencement of the Work and may at its sole option, obtain insurance that will protect the interests of the Owner in the Work. In the event the Contractor fails to procure or maintain coverage, the Contractor waives all rights against the Owner to the extent the loss to the Contractor would have been covered by the insurance required to be provided. If the Contractor does not provide written notice, and the Owner is damaged by the Contractor's failure or neglect to purchase or maintain the required Builder's Risk insurance, the Contractor shall reimburse the Owner for all reasonable costs and damages attributable thereto.

Builder's Risk Deductible. For any claim made against the builder's risk insurance, the deductible shall not exceed Two Thousand Five Hundred Dollars ($2,500) for a Contract Sum (or Guaranteed Maximum Price, if the Project is a Construction Manager at Risk project), of less than $4 million. For a Contract Sum (or Guaranteed Maximum Price, if the Project is a Construction Manager at Risk project), of $4 million or more, the deductible shall not exceed Five Thousand Dollars ($5,000). Contractor shall be responsible for losses within such deductible amounts.

Partial Occupancy. Unless the requirement for the Contractor maintain Builder's Risk insurance is released by the Owner, in writing, coverage shall be maintained by the Contractor until Final Payment is made to the Contractor or expiration of the period for correction of the Work set forth in Section 12.2 whichever is later. The Owner's occupancy or use of any completed or partially completed portion of the Work prior to Substantial Completion shall not commence until the insurance company or companies providing the Builder's Risk Policy or Policies have consented in writing to the continuance of coverage. The Owner and the Contractor shall take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of insurance, unless they agree otherwise in

writing.

§ 11.1.1.6 Professional Liability Insurance for Construction Manager-At-Risk.
In addition to the coverage and limits provided above, if these General Conditions are incorporated into the AIA Document A133™–2019 Standard Form of Agreement Between Owner and Construction Manager as Constructor *where the basis of payment is the Cost of the Work Plus a Fee with a Guaranteed Maximum Price*, the Construction Manager shall also purchase and maintain Professional Liability Insurance covering negligent acts, errors and omissions in the performance of professional services during the pre-construction phase, with policy limits of not less than One Million Dollars ($1,000,000.00) per claim and Two Million Dollars ($2,000,000.00) in the aggregate.

§ 11.1.1.7 Worker's Compensation Insurance. Contractor shall purchase and maintain statutorily required worker's compensation coverage, including all liability arising out of Contractor's employment of workers and anyone for whom Contractor shall be liable for Worker's Compensation claims. Worker's Compensation is required, and no "alternative" form of insurance shall be permitted. The worker's compensation insurance shall include a Waiver of Subrogation Endorsement.

§ 11.1.2 Form of Insurance.
All insurance required herein shall be in a form approved by the Owner, shall be purchased from an insurance company or companies that permit waivers of subrogation, is lawfully authorized to issue insurance in the State of Texas and shall be underwritten by a company rated A-VIII or better as published in the A.M. Best's Key Rating Guide. All insurance shall be written on an occurrence basis, if available.

§ 11.1.3 Evidence of Insurance. Satisfactory evidence of insurance required by this Article, including a Certificate of Insurance and copies of all required, endorsements, shall be provided to Owner prior to execution of the Contract. In addition to the evidence initially required by this Section, the Contractor shall furnish to Owner upon request copies of the full policies, and endorsements at any time during the applicable statutory period of repose set out in TEX. CIV. PRAC. REM CODE §§ 16.008. If the Contractor neglects or refuses to provide any insurance required herein, or if any insurance is canceled, and not replaced, such failure shall be treated as an event of default under this Agreement. The Contractor shall also furnish Owner all subsequent insurance amendments, renewals, notices, cancellations and endorsements, at the same time they are provided to Contractor.

§ 11.1.3 Required Endorsements
§ 11.1.3.1 - Primary and Non-Contributory. All insurance required herein shall, by endorsement, be primary and non-contributory insurance with respect to the Owner, its officers, Trustees, employees, representatives and agents and shall seek no contribution from any insurance available to Owner.

§ 11.1.3.2 Waiver of Subrogation. All insurance required herein shall include an endorsement providing a waiver of subrogation in favor of Owner on all claims arising out of the Project. The policies shall provide such waivers of subrogation in favor of Owner on all claims arising out of the Project, by endorsement or otherwise.

§ 11.1.3.3 Additional Insured and Loss Payee.

.1 To the fullest extent permitted by law, the Contractor shall cause the commercial liability coverage, automobile liability coverage and any other insurance required by the Agreement, with the exception of Workers' Compensation insurance, 11 to include (1) the Owner as additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 0

.2 The Owner shall be named as Loss Payee under the Builder's Risk property insurance. Evidence of additional insured status will be provided to Owner by providing a copy of the endorsement being utilized to bind the additional coverage.

§ 11.1.3.4 A copy of all endorsements shall be provided to the Owner at the same time as the Insurance Certificates required above.

§ 11.1.4 Notice of Reduction, Restriction Cancellation or Expiration.

§ 11.1.4.1 Reduction, Restriction Cancellation Within three (3) Working Days of the date the Contractor becomes aware of a reduction, or restriction, an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such reduction, restriction, impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall have the right to stop the Work until the lapse, reduction, or restriction in coverage has been cured by the procurement of replacement coverage by the Contractor.

§ 11.1.4.2 Expiration At least 20 calendar days prior to the date of expiration of any required insurance policy, Contractor shall provide Owner written notice of the impending expiration date and prior to cancellation shall provide replacement coverage of the required insurance. Unless the lapse in coverage arises from an act or omission of the Owner: (1) the Owner, upon receipt of notice from the Contractor, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor; and (2) the Contractor waives all rights against the Owner, its Trustees, agents and employees to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide required insurance.

§ 11.1.5 Statutory Workmen's Compensation Notice. The following statutory language is required by 28 TAC Rule §(a)(7) in connection with the Workmen's Compensation Insurance required herein.

§ 11.1.5.1 Definitions:

.1 **Certificate of coverage ("Certificate").** A copy of a certificate of insurance, a certificate of authority to self-insure issued by the division, showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on the Project, for the duration of the Project.

.2 **Duration of the Project.** Includes the time from the beginning of the work on the Project until the Contractor's work on the Project has been completed and accepted by the Owner.

.3 **Persons providing services on the Project ("subcontractor" in Texas Labor Code §406.096).** Includes all persons or entities performing all or part of the services the Contractor has undertaken to perform on the Project, regardless of whether that person contracts directly with the Contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the Project. "Services" include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a Project. "Services" does not include activities unrelated to the Project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

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

§ 11.1.5.3 The Contractor must provide a certificate of coverage to the Owner prior to execution of the Contract.

§ 11.1.5.4 If the coverage period shown on the Contractor's current certificate of coverage ends during the duration of the Project, the Contractor must, prior to the end of the coverage period, file a new certificate of coverage with the Owner showing that coverage has been extended.

§ 11.1.5.5 The Contractor shall obtain from each person providing Services on a Project, and provide to the Owner, upon request:

.1 a certificate of coverage, prior to that person beginning work on the Project, so the Owner will have on file certificates of coverage showing coverage for all persons providing services on the Project; and

.2 no later than seven (7) days after receipt by the Contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the Project.

§ 11.1.5.6 The Contractor shall retain all required certificates of coverage for the duration of the Project and for one (1) year thereafter.

§ 11.1.5.7 The Contractor shall notify the Owner in writing by certified mail or personal delivery, within ten (10) days after the Contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the Project.

§ 11.1.5.8 The Contractor shall post on each Project site a notice, in the text, form and manner prescribed by the Texas Department of Insurance, Division of Workers' Compensation, informing all persons providing services on the Project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.

§ 11.1.5.9 The Contractor shall contractually require each person with whom it contracts to provide services on a Project, to:

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

.2 provide to the Contractor, prior to that person beginning work on the Project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the Project, for the duration of the Project;

.3 provide the Contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the Project;

.4 obtain from each other person with whom it contracts, and provide to the Contractor:

(a) a certificate of coverage, prior to the other person beginning work on the Project; and

(b) a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the Project;

.5 retain all required certificates of coverage on file for the duration of the Project and for one (1) year thereafter;

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

.7 contractually require each person with whom it contracts, to perform as required by Subparagraphs .9.1 - .9.7 with the certificates of coverage to be provided to the person for whom they are providing services.

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

§ 11.1.5.11 The Contractor's failure to comply with any of these provisions is a breach of contract by the Contractor which entitles the Owner to declare the contract void if the Contractor does not remedy the breach within ten (10) days after receipt of notice of breach from the Owner.

§ 11.2 Owner's Insurance. [Paragraph and all Sub Paragraphs Deleted].

§ 11.3 Waivers of Subrogation [Paragraphs Deleted].

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance [Paragraph Deleted.]

§11.5 Adjustment and Settlement of Insured Loss [Paragraph and all Sub Paragraphs Deleted].

§ 11.6. Performance and Payment Bonds

§ 11.6.1 The Contractor is required, as a condition precedent to the execution of the Contract, to execute a PERFORMANCE BOND in the form required by TEXAS STATUTES, in an amount equal to ONE HUNDRED PERCENT (100%) of the Contract Sum

§ 11.6.2 The Contractor is required, as a condition precedent to the execution of the Contract, to execute a PAYMENT BOND in the form required by TEXAS STATUTES, in an amount equal to ONE HUNDRED PERCENT (100%) of the Contract Sum as security for payment of all persons performing labor and furnishing materials in connection with this Contract. (Bonding Company is to furnish such forms). All bonds shall name the Owner as additional obligee.

§ 11.6.3 The Payment and Performance Bond shall meet requirements of Chapter 2253 of the Texas Governmental Code. All bonds shall be issued by a surety company licensed, listed and authorized to issue bonds in the State of Texas by the Texas Department of Insurance. The surety company may be required by the Owner to have a rating of not less than "B" in the latest edition of Best's Insurance Reports, Property-Casualty. The surety company shall provide, if requested, information on bonding capacity, other projects under coverage and shall provide proof to establish adequate financial capacity for this Project. Should the bond amount be in excess of ten percent (10%) of the surety company's capital and surplus, the surety company issuing the bond shall certify that the surety company has acquired reinsurance, in a form and amount acceptable to the Owner, to reinsure the portion of the risk that exceeds ten percent (10%) of the surety company's capital and surplus with one or more reinsurers who are duly authorized and admitted to do business in Texas and that amount reinsured by an reinsurer does not exceed ten percent (10%) of the reinsurer's capital and surplus. The Sureties shall promptly file a signed copy of the Contract, Performance, and Payment Bonds with the Owner in full compliance with Chapter 2253 of the Texas Government Code.

§ 11.6.4 All bonds will be reviewed by the Architect for compliance with the Contract Documents prior to execution of the contract. In the event that the Architect has any questions concerning the sufficiency of the bonds, the bonds will be referred to the Owner or the Owner's representative for review and decision.

§ 11.6.5 All bonds shall be originals. The Contractor 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. The name, address, and telephone number of a contact person for the bonding company shall be provided.

§ 11.6.6 Upon the request in writing 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 permit a copy to be made.

§ 11.6.7 Bonds shall be signed by an agent resident in the State of Texas and the date of the bond shall be the date of execution of the contract. If at any time during the continuance of the contract, the surety of the Contractor's bonds becomes insufficient, Owner shall have the right to require additional and sufficient sureties which the Contractor shall furnish to the satisfaction of the Owner within ten (10) business days after notice to do so. In default thereof, the Contractor may be suspended, and all payment or money due to the Contractor withheld.

§ 11.6.8 By inclusion of this Section 11.6.8 in the Contract Documents, the surety which issues the bonds is hereby notified that the Owner, the Architect, and their agents and employees do not represent and will not be responsible for the surety's interests during the course of the Work. To protect its interests, the surety shall have the right to attend pay estimate meetings, review Applications for Payment when requested in writing by them, comment upon and make recommendations regarding payments, and inspect the Work in the presence of the Contractor and the Architect. By providing the bonds for the Work, the surety shall and hereby waives any cause of action against the Owner, the Architect, their agents and employees, for any loss suffered by the surety by reason of overpayment of any amounts to the Contractor, unless such is a direct result of a fraudulent or grossly negligent act committed by such party.

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, to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination. If the Work is not in accordance with the Contract Documents, the Contractor shall, at its sole expense, pay the costs of uncovering the Work, the cost to correct the Work so that it is in accordance with the Contract Documents and the costs to re-cover the Work.

§ 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 may be entitled to an equitable adjustment to the Contract Time if a timely Claim is filed under Article 15. 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. In such event, no claim for an adjustment of the Contract Sum and Contract Time shall be permitted.

§ 12.2 Correction of Work. Nothing contained in this Article 12 is intended to limit or modify any obligations under the law or under the Contract Documents, including any warranty obligations, expressed or implied. When Owner has an applicable claim for construction defects, Owner shall comply with the provisions of Texas Government Code Chapter 2272 related to the provision of notice of defects and the Contractor's or Architect's opportunity to cure.

§ 12.2.1 Before Substantial Completion

§ 12.2.1.1 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.

§ 12.2.1.2 Prior to the expiration of one (1) year from the date of Substantial Completion, the Architect will conduct, and the Contractor shall attend a meeting with the Owner to assure that the improvements operations and performance of all aspects of the completed Work are performing in accordance with the Contract Documents and no defects have arisen which require correction.

§ 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 written notice from the Owner (or if prior to Final Completion, the Architect). to do so, unless the Owner has previously given the Contractor a written acceptance of such specific condition. 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 at Contractor's sole cost including compensation for the Architect's services and expenses made necessary thereby in accordance with Section 2.5, or at Owner's election, make demand for pre-suit mediation in accordance with Article 15.

§ 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 be extended by corrective Work performed by the Contractor pursuant to this Section 12.2, and/or Sections 2.5 and 3.5, but only as to the corrected Work.

§ 12.2.2.4 If the Contractor fails to perform the corrective Work, then Owner may perform corrective Work, at Contractor's cost. If Owner performs corrective Work, then Owner may also remove nonconforming Work and store the salvageable materials or equipment at Contractor's expense. If the Contractor does not pay all costs incurred by Owner within ten (10) days after written notice, then Owner may, upon ten (10) additional days' written notice, sell the removed materials and equipment in accordance with Owner's policies, and shall account for the

proceeds thereof, after deducting costs and damages that should have been borne by the Contractor, including compensation for the Architect's services and expenses made necessary thereby. If such proceeds of sale do not cover costs which the Contractor should have borne, then the Contractor shall pay the difference to the Owner.

§ 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. Contractor shall replace, repair, or restore any parts of the Project or furniture, fixtures, equipment, or other items placed therein (whether by Owner or any other party) that are destroyed or damaged by any such parts of the Work that do not conform to the requirements of the Contract Documents or by defects in the Work.

§ 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.

§ 12.2.6 The provisions of this Section 12.2 apply to Work done by Subcontractors of the Contractor as well as Work done directly by employees of the Contractor. The provisions of this Section 12.2.6 shall not apply to corrective Work attributable solely to the acts or omissions of any separate Contractor of Owner (unless Contractor is acting in such capacity). The cost to Contractor of performing any of its obligations under this Section 12.2.6 to the extent not covered by insurance shall be borne by Contractor.

§ 12.2.7 If Owner and Contractor deem it inexpedient to require the correction of Work damaged or not done in accordance with the Contract Documents, an equitable deduction from the Contract Sum may be made by agreement between Contractor and Owner. Until such settlement, Owner may withhold such sums as Owner deems just and reasonable from moneys, if any, due Contractor. The settlement shall not be unreasonably delayed by the Owner and the amount of money withheld shall be based on estimated actual cost of the correction to Owner.

§ 12.2.8 Emergency Repairs. The Owner may make emergency repairs to the Work or take such other measures reasonably necessary under the circumstances, if the Contractor does not promptly respond to a notice of defect or nonconforming Work. Contractor shall be responsible to Owner for this cost if the reason for the repairs is attributable to the Contractor. If payments then or thereafter due to the Contractor are not sufficient to cover such costs, then the Contractor shall pay the difference to the Owner on demand. Emergency repairs for purposes of this Paragraph means repairs which are necessary, as a result of the happening of an unexpected event, to protect, maintain, or repair the any aspect of the Project or the facilities included in the Project and pose immediate threat of damage or injury to persons or property or immediate threats of violations of law or impairment of the District's ability to conduct instructional programing on the site.

§ 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 laws of the State of Texas and any litigation shall be conducted in state district court. Mandatory and exclusive venue for any disputes shall be in the county in which the place where the Project is located. Any litigation to enforce or interpret any terms of the Contract, or any other litigation arising out of or as a result of the Contract, shall be brought in the State courts of said County. No provision of this Agreement shall waive any immunity or defense.

§ 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 in whole or in part, 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 or other entity 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.

§ 13.3.3 There are no third-party beneficiaries to this agreement.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made at appropriate times as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities having jurisdiction. The Owner will contract, independently of the Contractor, for inspection services; including, but not limited to the testing of construction materials engineering, and the verification testing services necessary for the acceptance of the Work by the Owner, in accordance with Texas Government Code Chapter 2269. The Contractor shall give timely written notice to the persons or entities selected by the Owner of the need for such services. 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 Owner shall provide or contract for such additional testing, inspection, or approval, Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense. Architect, Owner and Contractor shall cooperate for the timely scheduling of such tests and inspections.

§ 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, but not limited to 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, with a copy to the Owner.

§ 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

Undisputed payments due and unpaid under the Contract Documents shall bear interest in accordance with the Texas Prompt Payment Act, Texas Gov't Code Chapter 2251. Any such payment shall be deemed overdue on the thirty-

first (31st) day after Owner receives the Contractor's Certificate for Payment from the Architect, if Owner's Board of Trustees meets more than once per month. Any such payment shall be deemed overdue on the forty-sixth (46th) day after Owner receives the Contractor's Certificate for Payment from the Architect, if Owner's Board of Trustees meets once a month or less frequently. No interest shall be due on sums properly retained by Owner, except as provided by law, or on disputed sums unpaid by Owner.

§ 13.6 Severability. The invalidity of any part or provision of the Contract Documents shall not impair or affect in any manner whatsoever the validity, enforceability or effect of the remainder of the Contract Documents.

§ 13.7 Contractor's Records

§ 13.7.1 Contractor shall at all times through the date of Final Completion, maintain Job Records, including, but not limited to, invoices, Construction Documents, payment records, payroll records, daily reports, diaries, logs, instructions, drawings, receipts, subcontracts, purchase orders, vouchers, memoranda, other financial data and job meeting minutes applicable to the Project, in a manner which maintains the integrity of the documents. Job Records must be retained by Contractor for a least twelve (12) years, after the date of Final Completion of the Project. Within ten (10) days of Owner's request, Contractor shall make such Job Records available for inspection, copying, and auditing by the Owner, Architect, or other respective representatives, at Owner's central office.

§ 13.7.2 If Contractor is a Construction Manager at Risk, then Contractor shall also maintain, in accordance with the provisions of Section 13.7.1, the following: subcontract files, including proposals of successful and unsuccessful bidders, bid recaps, and subcontractor payments; original estimates; estimating work sheets; general ledger entries detailing cash and trade discounts received; insurance rebates and dividends; and any other supporting evidence deemed necessary by the Owner to substantiate charges related to the Contract.

§ 13.7.3 Contractor shall keep a full and detailed financial accounting system and shall exercise such controls as may be necessary for property financial management under this Contract; the accounting and control systems shall be satisfactory to the Owner and shall be subject to the provisions of Section 13.7.1.

§ 13.7.4 Contractor shall keep all Contract Documents related to the Project, subject to the provisions of Section 13.7.1, provided, however, Contractor shall not destroy said documents until Contractor has confirmed with Owner in writing, that Owner has obtained a copy of all as-built drawings.

§ 13.7.5 In the event that an audit conducted by the Owner reveals any errors/overpayments by the Owner, then the Contractor shall refund to the Owner the full amount of such overpayments within thirty (30) days of such audit findings, or the Owner, at its option, reserves the right to deduct such amounts owed to the Owner from any payments due to the Contractor.

§ 13.8 Equal Opportunity Employment

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

§ 13.8.2 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, national origin, or any class otherwise protected by District policy or law.

§ 13.9 Public Information Act and Open Meetings Act.

§ 13.9.1 General. The parties acknowledge that, as a public entity in the State of Texas, Owner is subject to, and must comply with, the provisions of the Texas Public Information Act, Texas Government Code Section 552.001, *et seq.*, and the Texas Open Meetings Act, Texas Government Code, Section 551.001. *et seq.*

§ 13.9.2 Subsection J and Contracting Information. The requirements of *Subchapter J, Chapter 552, Government Code* ("Subchapter J"), which applies to any entity that executes a contract with a governmental body but which is not itself a governmental body, and the contract is for the amount of at least $1 million for the purchase of goods or services by the governmental body, or results in the expenditure by the governmental body of at least is $1,000,000 for goods and services during its fiscal year. If Subchapter J, applies to this Contract or the Owner's Agreement

with the Architect, and the Owner receives a written request for contracting information related to this Contract, which is in the custody or possession of the Contractor or Architect, as applicable, and is not maintained by the Owner, the Contractor and/or Architect will be required, upon request of the Owner to timely provide the information contracting information related to this Contract to the Owner, in accordance with the requirements of Subchapter J.

§ 13.9.2.1 Contracting Information, as defined by Section 552.003(7) of the Texas Government Code, in the custody or possession of the Contractor is public and must be released unless excepted from disclosure by one or more exceptions listed in Chapter 552 of the Government Code.

§ 13.9.2.2 If Subchapter J is applicable to this Contractor Contract or the Architect Agreement, the Contractor or Architect shall:

.1 preserve all Contracting Information related to the Contractor Contract or the Architect Agreement, as applicable, as provided by the records retention requirements applicable to the Owner for the duration of the contract;

.2 promptly provide to the Owner any Contracting Information related to the Contractor Contract or the Architect Agreement, as applicable, that is in the custody or possession of the Contractor or Architect, as applicable, on request of the governmental body; and

.3 on completion of the Contractor Contract or the Architect Agreement, as applicable, either:
(A) provide at no cost to the Owner all Contracting Information related to the Contractor Contract or the Architect Agreement, as applicable, that is in the custody or possession of the Contractor or Architect, as applicable; or
(B) preserve the Contracting Information related to the Contractor or Architect, as applicable as provided by the records retention requirements applicable to the Owner.

§ 13.9.2.3 The Contractor and Architect understand and agree that the Contractor Contract or the Architect Agreement, as applicable, can be terminated if the Contractor or Architect knowingly or intentionally fails to comply with a requirement of Subchapter J. If the either the Contractor Contract or the Architect Agreement, as applicable, is terminated under the Subchapter, the Owner's ability to enter into a future contract with the Contractor may also be impaired

§ 13.9.3 Some of the information Contractor or Architect may provide in connection with this Contract, the Architect's Agreement, or information contained in the Contract Documents may be eligible for exemption from disclosure under the Act; however, the Contractor or Architect, will need to take actions prior to execution of the Contract in order to assure that Contractor's or Architects' right to assert an exemption is preserved. The Contractor and Architect acknowledge that they have each been encouraged to consult their respective legal counsel to assure that any necessary steps required are taken to preserve its rights.

§ 13.10 Contractor will use Owner's electronic Project/Construction Management Software for documentation, tracking and processing. Such use shall be at no cost to the Contractor and Owner will provide license to the Contractor.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 If the Work is stopped for a period of sixty (60) 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, Work under direct or indirect contract with the Contractor, for any of the reasons set forth below, the Contractor may terminate the Contract upon twenty (20) days written notice to Owner and Architect if the Work is not allowed to commence within such period. The sole grounds for termination under this Subsection 14.1.1 are as follows:

.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; or

.3 Because the Owner has not made payment of undisputed sums due on an approved Certificate for Payment within the time stated in the Contract Documents

.4 [Subsection Deleted.]

§ 14.1.2 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, the Contractor may terminate the Contract so long as Contractor has provided Owner and Architect with written notice of its intent to terminate in the event of additional delays of not less than twenty (20) days and has furnished written notice of termination to Owner and Architect no less than seven (7) days prior to the effective date of termination.

§ 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 in an amount which would have been recoverable had the termination been for the Owner's convenience.

§ 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' written 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 for materials or labor 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;
- **.4** fails to proceed continuously and diligently with the construction and completion of the Work; except as permitted under the Contract Documents;
- **.5** repeatedly fails to comply with deadlines or timelines for resolution of construction defects or to respond to Owner's request for Extraordinary Measures to be used to recover schedule delays as provided in Section 3.10.4;
- **.6** becomes insolvent, enters bankruptcy, receivership or other like proceeding; voluntary or involuntarily, or makes an assignment for the benefit of creditors; and the Contractor, within fifteen (15) days after receipt of notice from the Owner, fails to provide satisfactory evidence that the Contractor will either (i) perform the Work of such Subcontractor with the Contractor's own forces, in a timely manner, or (ii) replace the Subcontractor with another similarly qualified Subcontractor who is ready, willing and able to do such Subcontractor's Work in a timely manner
- **.7** fails to furnish the Owner, upon written request, with assurances satisfactory to the Owner, evidencing the Contractor's ability to complete the Work in compliance with all the requirements of the Contract Documents;
- **.8** engages in serious or repeated worker misconduct in violation of Article 3.3.2;
- **.9** engages in conduct that would constitute a violation of state or federal criminal law, including but not limited to, the laws prohibiting certain gifts to public servants, or engages in conduct that would constitute a violation of the Owner's ethics or conflict of interest policies;
- **.10** fails to proceed continuously and diligently with the construction and completion of the Work, except as permitted under the Contact Documents; or
- **.11** 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, subject to any prior rights of the surety, 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. In any such event, title to the Work and any products thereof, whether completed or partially completed, as well as all materials prepared, procured or set aside by the Contractor for use in the Work, shall vest in the Owner at the Owner's option, and the Owner may enter the Contractor's premises and remove the same therefrom. No election hereunder shall be construed as a waiver of any rights or remedies of the Owner with regard to any breach of the contract Documents.

§ 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. Any further payment shall be limited to amounts earned to the date of termination.

§ 14.2.4 If 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, exceed the unpaid balance of the Contract Sum or Guaranteed Maximum Price (if the Project is a Construction Manager at Risk project) then the Contractor and/or its Surety shall pay the difference to the Owner. The amount to be paid to the Owner, shall be certified by the Architect, upon application. 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, Guaranteed Maximum Price, and Contract Time may be adjusted, by mutual written agreement, for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. 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 written 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 prior to the date of termination

14.4.4 Upon determination by a Court of competent jurisdiction that termination of the Contractor pursuant to Section 14.2 was wrongful, such termination will be deemed converted to a termination for convenience pursuant to Section 14.4, and Contractor's remedy for wrongful termination shall be limited to the recovery of the payments permitted for termination for convenience as set forth in Section 14.4.

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, within the period specified by applicable law

§ 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.

§ 15.1.3.3 When Owner has an applicable claim for construction defects, Owner shall comply with the provisions of Texas Government Code Chapter 2272 related to the provision of notice of defects and the Contractor's or Architect's opportunity to cure.

§ 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.

§ 15.1.4.2 The Contract Time shall be adjusted in accordance with the Owner's decision, subject to the right of either party to proceed in accordance with this Article 15.

§ 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 No increase in the Contract Time will be allowed except as expressly provided in Paragraph 8.3 above. If the Contractor wishes to make a Claim for an increase in the Contract Time, notice shall be given in writing and delivered on or before the due date of Contractor's Application for Payment covering the period in which the delay began. Claims for extension of time shall be stated in whole or half calendar days, as applicable. The actual date on which the delay(s) occurred must be stated in the claim. The Contractor's Claim shall include an estimate of the probable delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 Weather Delay.

§ 15.1.6.2.1 The Contractor shall bear the entire economic risk of anticipated weather delays and disruptions and shall not be entitled to any increase in the Contract Price by reason of such delays or disruptions and for purposes of estimating the anticipated weather delays that will be recognized by the Owner, the Contractor shall utilize the Weather Data Sheet for San Antonio, Texas attached as **Attachment "O"** in the Project Manual for the Project. Attachment "O" sets out the Average Rainfall data and Average Rain days that the Owner will consider to be "anticipated" for purposes of rain delay claims. Unusual inclement weather as used herein means unusually severe weather which is beyond the normal weather recorded and expected for the locality of the Work and/or the season or seasons of the year.

§ 15.1.6.2.2 The Contractor may be entitled to an extension of the Contract Time for delays or disruptions due to unusually inclement weather in excess of that normally experienced at the job site (including rain), that is: (1) in excess of that normally experienced at the job site established by Attachment "O" data; (2) is experienced on a contract work day, where work on the Project is substantially affected by the unusual inclement weather (including rain) or muddy conditions so as to materially affect the critical path of the project; (3) for a rain event, a minimum of

0.20 inches of rain is measured and documented at the site on the day of the rain event, by an Owner-recognized gauging device provided by the Contractor. Substantiating data establishing these factors and conditions must be included in any claim for additional time

§ 15.1.6.3 Strikes/Lockouts or Other Actions Outside the Control of Contractor. Any claim for extension of time for strikes or lockouts shall be supported by a statement of facts concerning the strike, including the dates, the craft concerned, the reason for the strike, efforts to resolve the dispute, and the efforts of the Contractor to minimize the impact of the strike upon progress of the Work.

§ 15.1.6.3 Transportation Delay. Any claim for extension of time for delays in transportation shall be supported by a statement of facts demonstrating that the delays are beyond the Contractor's control, and reciting the Contractor's efforts to overcome such delays

§ 15.1.7 Calculating Claims For Damages

Except as otherwise provided in this Agreement, in calculating the amount of any Claim recoverable by the Contractor, the following standards will apply:

- **.1** No indirect or consequential damages will be allowed.
- **.2** No recovery shall be based on a comparison of planned expenditures to total actual expenditures, or on estimated loss of labor efficiency, or on a comparison of planned manloading to actual manloading, or any other analysis that is used to show damages indirectly.
- **.3** Damages are limited to extra costs specifically shown to have been directly caused by a proven wrong.
- **.4** No damages will be allowed for home office overhead or other home office changes or any Eichlay formula calculation.

§ 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 proceed to litigation without a decision having been rendered by the Initial Decision Maker. 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 (10) 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) issue an initial recommendation (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to issue an initial recommendation due to a lack of sufficient information or conflict of interest.

§ 15.2.3 Following receipt of the Architect's initial recommendation regarding a claim, the Owner and Contractor shall attempt to reach agreement as to any adjustment to the Contract Price and/or Contract Time. .

§ 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.

§ 15.2.5 [Paragraph Deleted.]

§ 15.2.6 [Paragraph Deleted.]

§ 15.2.6.1 [Paragraph Deleted.]

§ 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 Waiver Of Lien. It is distinctly understood that by virtue of this Contract, no mechanic, contractor, materialman, artisan, or laborer, whether skilled or unskilled, shall ever in any manner have, claim, or acquire any lien upon the 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 building or any of the improvements are so erected, built, or situated.

§ 15.3 Mediation [This Section 15.3. including all subparagraphs and sub-subparagraphs are intentionally deleted.]

§ 15.4 Arbitration [This Section 15.4. including all subparagraphs and sub-subparagraphs are intentionally deleted.]

§ 15.5 Immunity

Contractor stipulates that Owner is a political subdivision of the State of Texas and, as such, may enjoy immunities from suit and liability under 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 provided by law.

These General Conditions are incorporated into and are deemed entered into on the same date as the AIA™ Document A101-2017 *Standard Agreement between Owner and Contractor* executed between the Parties.

Northside Independent
School District
San Antonio, Texas

Department of Facilities and Operations

Owner's Special Conditions

INDEX

INTRODUCTION

The Owner's Special Conditions have been developed by Northside Independent School District, Department of Facilities and Operations (Owner), to assist the Contractor with procedures during the construction and close-out of this project. For the purpose of brevity, the term "Contractor" as used in these Owner's Special Conditions shall refer to The General Contractor or Construction Manager at Risk as applicable to the particular project. Depending upon the specific type of project (addition, renovation, new school, mechanical work, roof replacement, etc.) certain sections or paragraphs may not be applicable. In general, this manual attempts to provide helpful administrative information specific to Northside ISD, (e.g. defining an agenda and format for the Pre-Construction Conference etc.) and to supplement many of the contractual requirements. No part of this Manual shall take precedence over or supplant the requirements set forth in the AIA Document A201-2017 General Conditions of The Contract for Construction, as modified by Northside Independent School District, Owner for the Project, unless specifically stated. In the event of any conflict the Contract Documents will take precedence. A thorough review of these Owner's Special Conditions will provide important information on topics essential to the orderly management of the construction project and an understanding of the relationships of all team members. Adherence to the procedures outlined herein intended to improve the flow of information.

Throughout the span of the Project, the Owner encourages suggestions from team members for ways to decrease time, improve quality or reduce costs. All suggestions may not be accepted but are always welcome. Acceptance of proposed changes shall be at the sole discretion of the Owner.

CHAPTER 1: PROJECT RESPONSIBILITIES

1.1 Team Concept

The Owner solicits the cooperation of the Architect, Engineer, Consultants and Contractor as team members to work under a Team Concept toward a successful project, but not limited to:

1.2 Owner's Responsibility

The Owner's responsibilities are defined in the AIA Document A201-2017 General Conditions of the Contract for Construction as amended by the Owner ("General Conditions") and as applicable to the Project, the AIA Document A101-2017, standard Form of Agreement Between Owner and Contractor, as amended by the Owner, or the AIA Document A133-2009, Standard Form of Agreement Between Owner and Construction Manager at Risk, as amended by the Owner ("Contract"). The Owner has assigned the following team members to the project with general duties as indicated.

DIRECTOR OF FACILITIES CONSTRUCTION/ DIRECTOR OF ENGINEERING SERVICES	• Manages Owner's Project staff • Liaison with existing school personnel • Liaison with other NISD team members • Reviews all payment applications and makes recommendation for payment, • Reviews all Change Orders, including Allowance Expenditure Authorizations & Change Directives and makes recommendation for approval • Assists in resolving disputes
OWNER'S PROJECT MANAGER	• Observes construction • Liaison with existing school personnel • Liaison with other NISD team members • Reviews submittals • Reviews all payment applications and makes recommendation for payment • Schedules and attends project meetings • Attends substantial completion and final inspections. • Reviews all including Contingency Allowance Expenditure Authorizations & Change Directives and makes recommendation for approval • Works with Consultant on document interpretations or clarifications • Liaison with agency representatives • Submits warranty requests through Consultant to the Contractor • Reviews mock-ups of various materials and systems
OWNER'S CONSTRUCTION OBSERVERS	• Observe all phases of construction • Reviews mock-ups of various materials and systems • Attend project meetings when necessary • May review submittals • Attend all above-ceiling, substantial completion and final inspections. • Conduct Pre-Installation Meetings. • Collect manpower counts when required.

1.3 Consultant's Responsibility

The Consultant's responsibilities are defined by the General Conditions, and its Contract with the Owner. The Consultant's General areas of responsibility include, but are not limited to:

- Interpretation and clarification of the Contract Documents
- Observation of construction
- Reporting of defective or deficient work
- Review of submittals
- Review of Contractor's applications for payment and time extension requests
- Review and processing of Proposal Requests, Construction Change Directives, Allowance Expenditure Authorizations, and Change Orders
- Review of the work at Substantial Completion and Final Inspection.
- Warranty Period

The Consultant is also responsible for employing various Consultants for appropriate phases of the work such as civil, mechanical, plumbing, electrical, technology and others as agreed in the Contract Documents.

1.4 Contractor's Responsibility

The Contractor's Construction Phase responsibilities are defined by the General Conditions, these Special Conditions, and Contract. This includes coordinating, scheduling and expediting the work for completion within the agreed upon schedule. General areas of responsibility include, but are not limited to:

- Management and coordination of all subcontractors
- Responsibility for all acts of all construction workers
- Protecting the Owner's interests
- Protection of students, Owner's Staff, people and property
- Maintaining an orderly, clean and safe construction site
- Coordination of trades and testing laboratories
- Notification or Consultant and Owner upon discovery of any questionable, conditions, designs, materials, details, or procedures
- Coordination with school principal to ensure student and staff safety
- Keeping the Consultant and Owner informed through reports and meetings
- Quality Control of all construction
- Compliance with all applicable codes and regulations
- Scheduling timely concealed space observations by Consultant, Owner and Governing Agencies
- Prompt correction of all warranty items
- Safety and Security

1.5 School Personnel

1.5.1 Authority. Many of the Owner's projects involve school personnel such as the principal of the school under (or affected by) the Construction. The Owner will designate appropriate school staff for contact/coordination purposes at the start of the Project. Designated school staff members are made available for coordination between the construction work and school activities during and after normal school hours. School staff have **no authority** in connection construction or design decisions with and shall not be contacted for information regarding scope or interpretation of the Contract Documents, changes in the work, or other duties reserved for the Consultant or other Owner personnel previously designated. The Contractor is not authorized to make any

changes in the work requested by school personnel unless it is an emergency affecting the immediate safety of students, school personnel, other persons or property.

1.5.2 Project Site Visits. Project visitation or tours shall be coordinated with the school principal (if site is operational) and Owner's Project Manager. Unauthorized and unscheduled tours will not be allowed due to safety concerns. Tours shall be arranged and authorized in advance with the General Contractor or Construction Manager and approved by the Owner and General Contractor or Construction Manager. All visitors to the Project site must check-in at the field office. All visitors must abide by all safety and insurance regulations at all times.

CHAPTER 2: PROJECT REQUIREMENTS

2.1 Access to Site

Routes for access to the site shall be restricted to those shown on the Contract Documents. If none are indicated, access routes shall be agreed upon during the Pre-Construction Conference. No change to this access route shall be allowed unless approved in writing by the Consultant. Any damage to existing paving, curbs, walkways, landscaping, Irrigation, etc. shall be repaired or replaced by the Contractor or Construction Manager at no cost to the Owner. The Contractor or Construction Manager shall be required to maintain the access roads in a clean condition at all times and remove any temporary access provisions at completion of the Work.

For projects involving additions and renovations to existing facilities, access shall be limited to locations agreed upon by the Owner, the school principal, the Consultant, and the Contractor and/or as shown on the Drawings. The Contractor shall enforce access restrictions with all personnel. Deliveries may be restricted to hours convenient to the school to avoid conflicts. Deliveries during school hours shall be approved by the Project Manager in advance of the delivery and coordinated at the Project Meeting before delivery will occur.

2.2 Field Office and Trailers

Provide temporary field offices, weather tight, lockable, and of sufficient size to accommodate required office personnel at the project site, furnished and equipped as specified below. The room(s) shall be maintained in a clean and orderly condition.

- Light colored resilient floor, wall and ceiling finishes
- Operable windows with blinds and insect screens
- Air conditioning and heating to maintain indoor temperatures of 68˚ F and 74˚ F respectively.
- Adequate fluorescent lighting
- 110-120 volt duplex outlets as necessary
- Telephone service with fax and internet connectivity
- Office furniture as necessary for Contractor's personnel
- Plan table(s) and bookshelves
- Meeting room with table and seating for 12 (minimum 250 sf) to be adjusted based upon health recommendations of the respective regulatory agencies
- Tack boards as required and erasable marker board
- Wall calendar
- Drinking water cooler as per health recommendations
- Connectivity – wireless and hard drops

The Field Office shall maintain/provide six (6) OSHA approved hardhats for NISD personnel. Hardhats shall be new and white in color and shall not have any logos.

The location of the trailer and other temporary buildings such as tool sheds, toilets, etc., shall be agreed upon by the Owner's Project Manager, the school principal, the Consultant, and the Contractor or as shown on the Drawings. The location shall be coordinated with future work so as not to interfere with utility work, paving, etc. and to avoid interference with existing school operations. The Contractor shall not locate trailers in existing parking area unless approved by the Owner.

2.3 Construction Parking

The Contractor shall allow parking by workers in areas designated in the Contract Documents. If not designated, a joint agreement shall be reached by the Owner, principal and Contractor. If space is not available, the Contractor shall require workers to park off-site.

2.4 Material Storage Areas

The Contractor shall restrict storage of materials to areas designated on the Contract Documents. If not designated, a joint agreement shall be reached by the Owner, principal and Contractor. Storage containers shall be immediately repaired/replaced if vandalized or damaged during construction.

2.5 Temporary Fencing

The Contractor shall provide a temporary construction fence where shown by the Contract Documents. Temporary fencing shall be chain link, except as permitted otherwise by the Consultant and Owner, minimum 6'—0" in height, with locking gates for entry. Posts shall be minimum 1.5" diameter galvanized steel firmly embedded in concrete. Fencing shall be maintained straight and secure for the duration of Construction operations requiring its presence.

2.6 Restrooms

The Contractor shall provide adequate temporary sanitary facilities for construction workers. These should be located to avoid odors and visibility by the students, staff and visitors. Under no circumstances will workers be allowed to use restrooms within the existing school facilities. Sanitary facilities shall be secured to prevent vandalism, and any vandalism repaired within twenty-four (24) hours.

2.7 Use of Existing Campus Facilities

Under no circumstances will construction workers be permitted to use the existing campus facilities, including but not limited to restroom facilities, school cafeteria, vending machines, telephones etc.

2.8 Construction Traffic within Existing School

The Contractor or Construction Manager shall monitor on a full-time basis all construction personnel of any tier working within existing buildings, especially when buildings are occupied by students or school staff.

2.9 Identification Badges

All construction personnel will be required to undergo a background and fingerprinting.

The badge shall be worn at all times the person is present on an existing campus. District issued badges will be provided to a select list of individuals as discussed with the district. All other construction staff not receiving a district issued badge shall still have a company issued badge which includes a current photo, person's name and the company under which the person is employed. Persons found at the Construction Site without their badge will be asked to leave the premises and will be reported to the Contractor's Superintendent. Refer to Attachment "S" for procedure.

2.10 Use of Existing Utilities

In new construction, the Contractor shall provide and pay the costs of temporary utilities for the duration of the Project until such time as the Project is fully accepted. Acceptance and turn-over of utility costs shall be the joint determination of the Consultant, Contractor and Owner, and such determination and date of cut-over shall be noted in the Project Meeting Minutes.

For renovation and addition work on existing campuses, in general, the cost of utilities (with exception of telephone and internet service) shall be borne by the Owner unless designated otherwise in the Contract Documents, and connection to the Owner's utilities will be permitted. When using the Owner's utilities the Contractor shall enforce energy and utility conservation whenever possible. If usage is determined to be excessive, in the sole determination of the Owner, the Contractor shall be required to reimburse the Owner for utility costs.

The Contractor shall be fully responsible to coordinate and verify existing utilities on site. Any damage occurring to existing utilities resulting from the work shall be the Contractor's responsibility to promptly repair at its cost. The Contractor shall immediately notify the Consultant and Owner should any utility service be interrupted during the project.

2.11 Security

The Contractor shall provide security to protect the Work, materials and site at all times. Temporary barriers, signage, lighting, etc., shall be provided as necessary. A full-time security person may be required, in the discretion of the Owner, for protection of the Work against vandalism, theft and other malicious acts. The cost of security shall be borne by the Contractor unless otherwise stated.

2.12 Harassment

Harassment of students, staff and other NISD personnel will not be tolerated. The Contractor will be informed of any complaints and will immediately and permanently remedy the problem.

2.13 Dress Code

Workers shall be fully clothed at all times. Workers wearing shorts or without shirts will not be allowed on the Project Site. Clothing shall not have indecent or suggestive logos or words. Advertisements for tobacco, alcohol, drugs or firearms are prohibited.

2.14 Tobacco

Smoking and use of smokeless tobacco products, electronic or vapor cigarettes or other products for delivery of tobacco or other substances is prohibited on the Owner's properties at all times and shall be fully enforced by the Contractor. Tobacco products may not be brought onto the Owner's property by any person at any time.

2.15 Illegal Drugs and Alcohol

No alcoholic beverages or illegal drugs shall be brought onto or used on the Owner's property at any time. Workers found in possession of such substances or believed to be under the influence of illegal drugs or alcohol shall be permanently removed from the Project.

2.16 Firearms

Firearms shall not be brought onto the Owner's property at any time. Anyone found to be in possession of a firearm(s) will be immediately referred to the local authorities and will be permanently expelled from the Project. This prohibition applies regardless of whether the individual possessing the firearm on Owner's property is otherwise licensed or permitted to carry a firearm in other locations or circumstances.

2.17 Project Sign

The Contractor shall provide, erect and maintain a Project sign as shown in the Contract Documents and as required by Texas Business and Commerce Code, Chapter 116. The sign shall be immediately repaired/replaced in the event of any damage during construction. Coordinate the location of the project sign with the Owner's Project Manager and, if required, the Principal of existing campuses.

2.18 Project Photographs

The Contractor shall maintain a comprehensive file of project photographs from the start to completion of the Project. The photographs shall include documentation of all trades and be chronologically ordered by date and trade to indicate the order and progression of the work. Particular attention shall be paid to concealed conditions. The files of photos shall be provided to the Consultant and Owner for inspection on CD-ROM upon request at any stage of construction. Contractor will be required to provide a monthly, high-quality aerial progress photo to be shared with the district at the beginning of each month during construction.

CHAPTER 3: PERMITS, LICENSES, CERTIFICATES, AND FEES

3.1 Contractor Licenses

The Contractor and all subcontractors involved in the Project shall obtain and pay for all necessary business and contractor licenses as required by any law or the Authority Having Jurisdiction (AHJ).

3.2 Building Permits

The Owner shall pay for the building permit unless otherwise indicated by the Contract Documents. The Contractor shall obtain and pay for all other required trade permits and pay for all inspections required by any authority having jurisdiction over the Project.

3.3 Grading and Foundation Permits

On projects that are developed on a fast-track basis, the Owner shall obtain and pay for the necessary clearing, grading and/or foundation permit.

3.4 State Highway Permits

In certain instances, the connection of a school entry drive to a highway requires a State Highway Permit. Unless otherwise noted the Contractor shall pay for this permit.

3.5 Utility Connection Fees

The Owner shall pay the utility connection fees only to connect to existing utilities at the property line or in adjacent streets and right-of-way for the Project. All other fees are the responsibility of the Contractor unless otherwise defined by the Contract Documents. The District is not subject to Impact Fees levied by most governmental entities and a developers, and will not be responsible for payment of any Impact Fee unless consent is provided in writing by the Owner's Representative, after approval of the Board of Trustees.

CHAPTER 4: SUBMITTALS

4.1 Submittals/Shop Drawings

The requirements for the submittal of shop drawings and submittal of material brochures are outlined in the Contract Documents and Project Specifications. All subcontractor submittals shall be approved by the Contractor, and then submitted to the Consultant through the Contractor. The Consultant shall review and take the appropriate action on submittals within fifteen (15) days after receipt, unless otherwise agreed. The Consultant will retain three (3) copies of each submittal. The Contractor shall retain two (2) copies of all approved submittals for the Owner's records. A complete set of all approved submittals (including an index) shall be transmitted through the Consultant to the Owner at the completion of the Project as a deliverable required for close-out of the Project and Final Payment.

The Contractor and Consultant shall maintain a log of submittals so that the status of all shop drawings, etc., may be monitored through the construction phase. The log shall contain adequate information regarding the submittal, review dates, submittal descriptions, and action taken.

If no submittal schedule is provided in the Contract Documents, Contractor shall prepare and provide a submittal schedule to the Consultant for review and approval, within fifteen (15) days after execution of the contract. The schedule is intended to establish an advance time line for when each submittal is required, and to avoid material delays. A shorter time for provision and approval of the submittal schedule may be designated in the Contract Documents and be applicable for smaller scope projects.

4.2 Interior and Exterior Color Schedule

Color and material selections must be approved by the Board of Trustees and may take up to five (5) weeks for approval. All items involving color or material selections shall be assembled and submitted to the Consultant at one time or as deemed necessary to keep the Project on schedule.

4.3 Substitutions

See Contract Documents and Specifications.

4.4 Mock-ups

The Contract Documents shall establish a list of mock-ups for various materials. Mock-ups are intended to establish a standard by which to gauge the work as it is constructed.

It is intended that each mock-up shall be exact and of the highest quality workmanship. The mock-up shall be constructed and completed at least three (3) days in advance of the subject work proceeding. Approval of the mock-up by the Owner and Consultant is required prior to work proceeding. Should the mock-up not be approved it shall be promptly removed and replaced at no cost to the Owner until such time as it meets the required standard.

4.5 Masonry Samples (on applicable projects only)

As soon after the execution of the contract as practical, the Contractor shall obtain samples of applicable masonry units specific to the project and submit them to the Consultant for review. The Consultant and Owner will select samples and advise the Contractor to proceed with building sample panels, at least 6' wide x 8' high of each of the masonry samples selected. Approval of the selected sample will be provided through the Consultant. The sample panel shall remain in good condition at the project site until substantial completion of the project.

CHAPTER 5: PROJECT MEETINGS

5.1 Pre-Construction Conference

Every project will have a Pre-Construction Conference, to include but not be limited to, NISD Facilities staff, campus/facility administrations & representatives, the design team Prime Contractor, and Subcontractors. The intent of this meeting is to introduce campus/facility staff to the design and construction team and exchange contact information. The meeting will also generally describe the District's/project requirements and expectations, schedule for the project and discuss contractor parking, storage and staging areas. Refer to Attachment R for sample agenda.

5.2 Project Meetings

Regular project meetings shall be scheduled by the Owner on a bi-weekly or as needed basis depending upon the size and complexity of the project. The meeting should be on the same time of day and day of week. The exact day, time and location of project meetings shall be agreed upon during the Pre-Construction Conference.
Representatives of these organizations should be in attendance at each meeting:

- General Contractor's Project Manager and Superintendent
- Mechanical/Plumbing Subcontractor
- Electrical Subcontractor
- Other Subcontractors as required by the Owner and Consultant
- Architect/Engineer
- Owner's consultants
- Owner

Special meetings may be called when required with appropriate prior notice to all applicable parties by the Owner, Consultant or Contractor.

The Consultant shall chair all project meetings and be responsible for scheduling, preparing the necessary agenda and minutes, and ensuring that necessary topics are discussed.

The Contractor shall be responsible for submitting a two-week Outlook Construction Schedule. In the Outlook Schedule the Contractor shall outline a forecast for the work

that is planned for the upcoming weeks. The Contractor shall inform the Design Team of what work will be started and or completed. Additionally, the Contractor shall state the current status of on-going work, new material (i.e. brick, joist, roofing, etc.) or equipment (i.e. Chillers, RTU, Kitchen, etc.) that is anticipated to arrive on the job site. The two-week outlook shall be submitted in writing at each bi-weekly project meeting.

5.3 Project Meeting Agenda

The Consultant shall prepare an agenda for the meeting and distribute copies of the agenda to the Owner and Contractor at least twenty-four (24) hours prior to the meeting. Topics for the agenda shall include, but not be limited to:

- Unfinished business from past project meetings
- Summary report on the status of the Overall Construction Schedule in relation to Substantial Completion.
- Review of the Outlook Construction Schedule
- Review of potential problems
- Review of the Submittal Log
- Review of status of Requests for Information (RFI), Proposal Requests, AEAs and Changes
- Review of Pre-installation Conference List
- Review of applications for payment (once per month)
- Other business

5.4 Meeting Minutes

The Consultant shall prepare formal minutes and forward a draft copy for review to the Owner, Consultants and Contractor within three (3) work days of the meeting requesting that any changes or corrections be returned to him within two (2) work days. The final formal minutes shall be formatted as agreed by the Parties and issued within two (2) work days thereafter.

5.5 Pre-Installation Conference

Pre-installation meetings shall be conducted for various trades. A list of the minimum required pre-installation conferences is included as an Attachment to this document. Other pre-installation conferences may be required and will be listed in other portions of the Contract Documents. Topics to be discussed in the pre-installation conference are found in the Contract Documents in each respective Section. In general, persons required to be in attendance at each pre-installation conference are as follows:

- General Contractor's Project Manager and Superintendent
- Specific Trade Subcontractor
- Related Trade Subcontractors (as necessary)
- Manufacturer's Representative (as necessary)
- Architect/Engineer
- Owner's consultants (as necessary)
- Owner

CHAPTER 6: CONSTRUCTION PHASING

6.1 New Campuses and Additions/Renovation to Existing Campuses

The Contractor shall cooperate with the Owner's representative and campus designee, to turn over portions of the building as required to meet the Owner's required schedule. Specifics regarding turn-over shall be discussed in various Project Meetings as completion of the Project nears.

In addition or renovation projects it may be necessary to divide the construction into phases so the school can continue to operate. Phasing of the Project is defined in the Contract Documents. Detailed discussions regarding phasing, room relocation, utility changeover, utility shut-off, etc., shall occur during the Pre-Construction Conference and Project Meetings.

6.2 Temporary Partitions

Temporary partitions are required to isolate areas under construction from operating portions of the school and, when necessary, are indicated on the Contract Documents. Temporary partitions shall be constructed as shown in the Contract Documents. Partitions shall be caulked or sealed to prevent dust on the construction side from passing through the school operation side.

6.3 Temporary Entrances

Temporary entrances are required and shall be constructed by the Contractor as shown in the Contract Documents and at locations coordinated with the Consultant and District for safe passage of students and staff or where required by applicable codes or regulations. Temporary entrances and coverings (if any) shall be structurally sound, engineered when required, comply with applicable building codes, allow for the safe operation of doors, adequate steps or ramps, have non-slip surfaces, and temporary signage. The location and construction of temporary partitions and temporary exits shall be reviewed with the Consultant and a representative of the authority having jurisdiction prior to construction.

6.4 Existing Systems.

6.4.1 Responsibilities. The Owner will be responsible for existing systems and operations **prior to the commencement of the Work on such systems**. The Owner shall provide evidence of adequate operation of system and the condition of existing system to the Contractor **prior to the commencement of the Work on such systems**. The Contractor and Consultant shall be present during testing and at other critical times during the start-up process. It is Contractor's responsibility to return the system to the existing condition or better in order for the installation to be deemed complete.

6.4.2 Equipment Relocation. The Contractor is responsible for investigating existing equipment to be relocated, determining the procedure, means, and method of removal and determining the appropriate rough-ins so the equipment can be relocated with minimal downtime. The time schedule for relocating the equipment shall be coordinated with the Consultant.

6.5 Authority Having Jurisdiction

During any project, the governing authority having jurisdiction normally requires a final inspection prior to timely occupancy of completed areas. The Contractor shall schedule these inspections to allow prompt occupancy of completed areas. A Temporary Certificate of Occupancy may be required and is the responsibility of the Contractor to obtain. Obtaining and maintaining the Temporary Certificate of Occupancy is the sole responsibility of the Contractor until such time as a permanent Certificate of Occupancy has been issued.

6.6 School Occupancy

Adequate time shall be allowed in the construction schedule for the Owner to arrange for and to relocate staff, furnishings and equipment to the completed phases or areas of the Project. Timing shall take into consideration deployment of technology and preparation of floors by the Owner's custodial staff. The Owner's Project Manager shall provide information regarding the District's requirements in this regard. Construction shall at all times be coordinated with school operations, both during and after regular hours, during testing periods, etc. where construction is conducted on or will affect an operating school campus. The current School Calendar will be provided to Contractor by Owner.

6.7 Utility Shutdown/Change Over

Contractor shall issue a request to the Owner's Project Manager and Consultant for a utility shutdown a minimum of 72 weekday hours. Owner's approval is required prior to any utility shut down.

All permits, testing and inspection required by both the authority having jurisdiction and the Owner shall be provided and coordinated with each shutdown. Where applicable the Owner's Maintenance Department will require "green tag" approvals from utility shut down inspection before any equipment may be restarted after a shutdown.

The Contractor shall ensure that the necessary materials and equipment are available on-site before beginning the shutdown or change-over. Any afterhours connections, if required, will be at no additional cost to the District. The Contractor shall be aware of school holiday schedules and attempt to schedule shutdowns/changes over these days when practical.

CHAPTER 7: INSPECTIONS/OBSERVATIONS

7.1 Consultant Responsibility

The Consultant's responsibilities during the Construction Phase, and those of his team, are defined in the Contract Documents, and the Consultant's Contract with the Owner. Following each site visit, the Consultant and/or his consulting engineers or other applicable consultants, are required to report in writing their observations to the Contractor and Owner within five (5) business days. The contents of reports shall be agreed upon by all Parties.

7.2 Contractor's Responsibility

The Contractor's responsibilities are defined in the Contract Documents, the Contract and the various Specification Sections.

7.3 Concealed Space Observation

Prior to the installation of any concealed material the Contractor shall notify the Consultant and Owner's Project Manager so that arrangements can be made for a review of the area proposed to be closed prior to its closure. The Contractor shall give as much advance notice as possible, but no less than 72 weekday hours. Preferably this task shall be scheduled on the Contractor's two-week outlook schedule.

7.4 Special Inspections

Special Inspections are required by the Building Code and Authority Having Jurisdiction (AHJ). Evidence of the successful completion of the Special Inspections, which are defined in the Contract Documents, must be provided by the Contractor prior to Substantial Completion.

The Contractor shall provide and maintain at the job trailer a log for sign-in by the Construction Materials Testing Laboratory. The Contractor's Superintendent shall monitor the log and ensure that the Testing Laboratory representative logs-in and out for each required task. The log shall also include dates and the log-in and log-out times for each inspection. The Project Superintendent shall also maintain on-site all Special Inspection reports from the Construction Materials Testing Laboratory.

7.5 Substantial Completion Inspection

Contractor shall perform necessary steps as listed in paragraph 9.8.2 of the AIA A201-2017 General Conditions of the Contract for Construction, as modified by Northside Independent School District, Owner for the Project.

The following people should be in attendance for the substantial completion inspection:

- General Contractor
- Mechanical Subcontractor
- Electrical Subcontractor
- Other Subcontractors as required
- Consultant
- Consulting Engineers
- Owner's Project Manager
- Owner's Construction Observers
- Owner's Maintenance Personnel

The punch list generated by the substantial completion inspection tour will be prepared by the Consultant and distributed to the Contractor and Owner.

It is essential that correction of all punch list items be completed within thirty (30) calendar days after its delivery to the contractor or as agreed by all parties. After correction is complete, the Contractor should notify the Consultant who will perform a follow-up review and sign off and date each item on the punch list to assure completion of each item on the punch list. Upon satisfactory completion of the deficiencies, the Consultant will submit to the Owner through the Contractor a signed off punch list and AIA Document G704™-2017 Certificate of Substantial Completion.

7.6 Future Maintenance

Adequate clearance to service and maintain equipment, valves, VAV boxes, electric panels, controls, etc. must be taken into consideration as each item is installed. It is the Contractor's responsibility to coordinate other trades that may be involved with

installation of equipment in the same area as an item that has been previously installed. Any equipment installed without the proper access or which restricts access to other equipment will be required to be removed or relocated and reinstalled to provide ample maintenance accessibility at no cost to the Owner.

7.7 Systems Verification

Near the completion of the project, the Owner will conduct an all systems verification for the purpose of confirming that the mechanical and electrical systems, fire alarm, intercom, security, public address, energy management controls, etc. are operating consistent with the contract documents, best practices and industry standards. Systems verification will occur only after the test and balance report has been completed.

CHAPTER 8: SCHEDULE OF VALUES AND APPLICATIONS AND CERTIFICATE FOR PAYMENT

8.1 Schedule of Values

The Contractor shall submit a completed AIA Document G703™-1992, Continuation Sheet, or equivalent, showing a complete Schedule of Values, to the Consultant prior to the first Application and Certificate for Payment. Multiple site projects shall have a separate AIA Document G703™-1992, Continuation Sheet, showing a complete Schedule of Values prepared for each site. See General Conditions Article 9.2.

8.2 Application for Payment

The Contractor's monthly Application and Certificate for Payment shall be submitted on a current version of the AIA Document G702™-1992, Application and Certificate for Payment. The various categories for the costs included in the Application and Certificate for Payment shall parallel the Schedule of Values previously submitted to and approved by the Consultant and approved by the Owner. An updated copy of the Schedule of Values submitted on an AIA Document AIA Document G703™-1992 Continuation Sheet, shall be re-submitted with each application for payment. The process and timelines for submission of Payment Applications are set out in the Contract Documents.

8.3 Final Application for Payment

The final application for payment may not be submitted until the project has been approved by the Consultant, the Owner, and applicable governing agencies. Additionally, the final application for payment will not be reviewed until all prerequisites for project close-out have been satisfactorily completed and delivered to the Consultant, including provision of record drawings, lien releases, maintenance manuals, warranties, equipment instruction, etc. as required by the Contract, and approval of the Project by the Owner, the Consultant and governing agencies from which approval is required by law.

8.4 Offsite Stored Materials

Payment for offsite stored materials will be considered by the district on a case by case basis. At any point in time, Northside ISD reserves the right to not consider offsite storage material request. Should the contractor wish to submit for payment of offsite stored material, contractor must, at no additional cost to the Owner, provide Builder's Risk insurance coverage identified in Attachment "P" of the Owner's Special Conditions to cover material and equipment while in storage, and the transit from the off-site

storage warehouse to the Project site. If the offsite stored materials are valued in excess of the policy coverages, the Contractor will be required to provide additional coverage at no cost to the district or defer request for payment on such material until the material is onsite.

Below is the process to seek approval for payment of offsite store materials.

1. Within the first week of the month(8th) the Prime Contractor shall submit a list of materials that are/will be requested for off-site storage, for that month's pay application. This will need to include justification as to why this material cannot be stored on site. Northside ISD will review request and determine which material will be acceptable to submit supplemental necessary information.
2. Once Northside ISD has approved the Prime Contractor to submit off-site stored materials, the prime contractor will need to prepare the following support documentation for review (see attached checklist) no later than the (15th) of the month or next business day. Each division and/or warehouse will require its own package for review as to not delay other packages for consideration. Documentation shall include but not be limited to:
    a. Offsite Storage Agreement signed by the Prime Contractor (Attachment Q)
    b. Pictures of physical products labeled for the project and properly stored per manufacturer's recommendations
    c. Invoices of material to be billed to clearly correlate requested dollar amount
    d. Supplemental Prime Contractor's Builder's Risk policy with Northside ISD as Payee (if applicable)
3. Once the district receives the off-site material package(s) with all the supporting documentation, NISD will verify all supporting documentation. Notification will be made to the Prime Contractor no later than the 22nd of the month on which package(s) have been approved to be on the upcoming pay application. If the package(s)are not approved by the 22nd of the month, these packages will not be included in the pay application and can be considered for the following month's pay application.

CHAPTER 9: SCHEDULES

9.1 Construction Schedules

A bar chart type "critical path method" schedule is required for all projects. The information shall be provided in a detailed format by trade, task and time frame. Each task shall be divided into defined units of work that can be measured against the schedule. The overall project must be separated into portions or phases that can be easily monitored.

The Contractor shall revise and update the master construction schedule no less than monthly adjusting the tasks and dates as necessary to reflect the actual condition of the Project. The Contractor shall submit a revised copy of the construction schedule with each monthly application for payment.

9.2 Construction Delays

The Contractor shall notify the Consultant and Owner of any claim for extension of time in writing on or before the due date of the Contractor's application for payment

concerning the period in which the delay began.

The Owner reserves the right to substitute unused monthly weather delay days for time extension days claimed for any reason by the Contractor, whether those be for delay of any kind or for change orders to the work.

The Owner, at its sole discretion, may elect to log delay days and hold such days for adjustment at the end of the contract. Time extensions for weather delays will not be granted until completion of the project, but will be logged monthly and adjusted at the end of the project, if necessary.

9.3 School Staff Support During Workdays

Work involving existing occupied buildings requires a staff member of the Owner be present during construction activities. Generally, the school custodial staff will open and close occupied facilities where construction is in progress. No keys will be issued or access codes provided to any individual working on the Project. Facilities will be open and available during normal workdays. Access may be arranged to accommodate work on extra workdays, such as, weekends and holidays. Arrangements with the school staff with notice to the Owner's Project Manager required no later than seventy-two (72) weekday hours prior to needed access. in order to adjust custodial hours. Short notice requests which results in overtime costs may be charged to the Contractor at the discretion of the Owner. A minimum of two (2) hours' time will be charged for any period in which a custodian is required to be onsite.

CHAPTER 10: CONSTRUCTION CHANGES

10.1 Control of Construction Changes

The Consultant will maintain a log of Proposal Requests (PR's), AEAs, Construction Change Directives, and Change Orders indicating the status at any time of those various documents. After a PR has been approved by the Owner can the change be included in an AEA, Construction Change Directive or Change Order (AIA Document G701™-2017 Change Order). The Consultant is responsible for assigning Change Order numbers, issuing Change Orders and keeping current logs all of approved changes. Information regarding the authorization of and procedure for Change Orders and Construction Change Directives is included at Section 7.2 of the A201-2017, General Conditions of the Contract of Construction as amended by the Owner.

CHAPTER 11: RECORD DOCUMENTS

11.1 Record Documents

The Contractor and its Subcontractors shall maintain an accurate, current set of record documents as construction progresses. These record documents shall be maintained on-site, as applicable, in the Contractor's office area(s). All deviations from the contract set of drawings shall be noted in red for clear identification. The Consultant, Engineers and Owner may periodically review the record documents.

11.2 Final Close-out of Project

Within 30 days after substantial completion of the total Project, the complete record documents shall be compiled by the Contractor and submitted to the Consultant.

11.3 Closing Documents

The Contractor shall use provided Closeout Checklist showing all required close-out documents to be provided, and shall submit two (2) copies and one electronic version of the document on a flash drive. The General Contractor shall list each subcontractor alphabetically on **Attachment "H".** The Consultant will confirm that both an AIA Document G706™-1994, Contractor's Affidavit of Payment of Debts and an AIA Document G706A™-1994 Contractor's Affidavit of Release of Liens, are included for each subcontractor. Each subcontractor shall fill out the form attached as **Attachment "I"** indicating any supplies used and confirming their submission of the AIA Document G706A™-1994, Contractor's Affidavit of Release of Liens. Warranties shall be included for any equipment furnished. All items for each subcontractor shall be assembled in a sturdy three-ring binder with an index and single tab dedicated to each subcontractor's deliverables and shall include all items listed on the NISD Project Closeout Checklist, attached as **Attachment "G".**

CHAPTER 12: MAINTENANCE MANUALS

12.1 Contents of Maintenance Manuals

The Contractor shall prepare maintenance and operating manuals for installed or provided equipment and systems. The Maintenance Manuals shall contain information relative to the operation and maintenance of the equipment, wiring diagrams and replacement parts lists.

12.2 Maintenance and Operations Manuals, Arrangement of Information

Maintenance Manuals shall be bound in sturdy three-ring binders with an index on the outside explaining the contents. Each piece of equipment shall be separated by tabs identifying that piece of equipment ("Equipment Tab"). Immediately behind each Equipment Tab shall be a typed list of information regarding the equipment, including the name and contact information for the manufacturer, model number, serial number, quantity and location (plan room number) for each piece of equipment to be maintained. Behind each Equipment Tab identification page should be a one-year calendar beginning on the date of turnover of equipment to the District and showing Manufacturer recommended routine maintenance tasks for the first full year. and a copy of the Maintenance Manual (or other manual) provided by the Manufacturer, establishing guidelines for care of the equipment. Copies of shop drawings should be provided therein where applicable.

12.3 Distribution of Maintenance Manuals

The Contractor shall prepare three (3) copies of the Maintenance Manual assembled on the specified equipment. Two (2) copies of this information shall be delivered to the Owner within seven (7) days following completion of installation of that particular piece of equipment if the Owner is to operate that equipment prior to final completion of the Project. The remaining copy of the maintenance manuals shall be delivered to the Architect within thirty (30) days following substantial completion of the Project along with all other close-out documents.

CHAPTER 13: PROJECT CLEAN-UP

13.1 Contractor's Responsibility

Contractor shall reference AIA A201-2017 General Conditions of the Contract for Construction, as modified by Northside Independent School District, Owner for the Project paragraph 3.15.1.

CHAPTER 14: WARRANTY PROCEDURES

14.1 Response to Request for Warranty Work

The Consultant, upon receipt of a request for warranty work from Owner shall forward the request immediately to the Contractor. Upon receipt of the warranty request, the Contractor shall initiate the repair. Prior to visiting the facility or commencing any work the Contractor shall contact the person who assigned to the warranty request. Upon arrival at the facility each worker shall check in and sign-in at the office or reception desk in the Administration Office. All workers shall be identified by their photo identification, while on District Property. It is expected that any warranty item that will impair the conduct of classes or operation of the District shall be acted upon immediately.

14.2 Repairs and Acknowledgment of Repairs

Coordination should be made with the Owner's personnel prior to commencing repairs. In any event, Owner-designated personnel must be present to acknowledge commencement of and completion of the repair, and must sign off on the repair request and notate the date on which the work commenced and the date on which the work was completed. A copy of the repair request shall be returned upon completion through the Consultant and with copy to the Director. The return of the signed copy to the Owner constitutes completion of the warranty request, all file copies shall be so annotated, and a letter prepared by the Owner officially close the warranty request.

See Section 6.8 of these Special Conditions Utility Shutdown/Change Over for utility interruptions procedures, which are required to be followed for repairs.

14.3 Follow-up Letters

The District will maintain a log of all warranty items submitted to the Contractor through the Consultant. Ten (10) working days after initiation of a request for warranty work, unless classified as an emergency or urgent, if a signed copy has not been returned, follow-up letters will be sent to the Consultant for its action. Warranty items which take longer than twenty (20) calendar days to complete will be considered severely deficient and meetings may be required to ascertain the reason for the Contractor's failure to respond. It is expected that the Consultant will establish their own logs and follow-up procedures to avoid meetings of this nature.

AIA® Document G702™ – 1992

Application and Certificate for Payment

TO OWNER:

PROJECT:

APPLICATION NO:

PERIOD TO:

CONTRACT FOR:

CONTRACT DATE:

PROJECT NOS: / /

FROM CONTRACTOR:

VIA ARCHITECT:

Distribution to:

OWNER ☐

ARCHITECT ☐

CONTRACTOR ☐

FIELD ☐

OTHER ☐

ATTACHMENT "A"

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract.
AIA Document G703™, Continuation Sheet, is attached.

1. **ORIGINAL CONTRACT SUM** ..... $ _____
2. **NET CHANGE BY CHANGE ORDERS** ..... $ _____
3. **CONTRACT SUM TO DATE** *(Line 1 ± 2)* ..... $ _____
4. **TOTAL COMPLETED & STORED TO DATE** *(Column G on G703)* ..... $ _____
5. **RETAINAGE:**
   a. _____% of Completed Work
   (Columns D + E on G703) $ _____
   b. _____% of Stored Material
   (Column F on G703) $ _____

   Total Retainage *(Lines 5a + 5b, or Total in Column I of G703)* ..... $ _____
6. **TOTAL EARNED LESS RETAINAGE** ..... $ _____
   (Line 4 minus Line 5 Total)
7. **LESS PREVIOUS CERTIFICATES FOR PAYMENT** ..... $ _____
   (Line 6 from prior Certificate)
8. **CURRENT PAYMENT DUE** ..... $ _____
9. **BALANCE TO FINISH, INCLUDING RETAINAGE**
   (Line 3 minus Line 6) $ _____

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	$	$
Total approved this month	$	$
TOTAL	$	$
NET CHANGES by Change Order	$	

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____ Date: _____

State of:

County of:

Subscribed and sworn to before me this _____ day of _____

Notary Public:

My commission expires:

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED ..... $ _____

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:

By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.

AIA® Document G703™ – 1992

Continuation Sheet

AIA Document G702™–1992, Application and Certificate for Payment, or G732™–2009, Application and Certificate for Payment, Construction Manager as Adviser Edition, containing Contractor's signed certification is attached.
In tabulations below, amounts are in US dollars.
Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO:
APPLICATION DATE:
PERIOD TO:
ARCHITECT'S PROJECT NO:

ATTACHMENT "B"

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED *(Not in D or E)*	TOTAL COMPLETED AND STORED TO DATE *(D+E+F)*	% *(G ÷ C)*	BALANCE TO FINISH *(C – G)*	RETAINAGE *(If variable rate)*
			FROM PREVIOUS APPLICATION *(D + E)*	THIS PERIOD					
	GRAND TOTAL								

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.

ATTACHMENT "C"

AIA® Document G701™ – 2017

Change Order

PROJECT: *(name and address)*	CONTRACT INFORMATION: Contract For: Date:	CHANGE ORDER INFORMATION: Change Order Number: Date:
OWNER: *(name and address)*	ARCHITECT: *(name and address)*	CONTRACTOR: *(name and address)*

THE CONTRACT IS CHANGED AS FOLLOWS:
(Insert a detailed description of the change and, if applicable, attach or reference specific exhibits. Also include agreed upon adjustments attributable to executed Construction Change Directives.)

The original (Contract Sum) (Guaranteed Maximum Price) was	$ _____
The net change by previously authorized Change Orders	$ _____
The (Contract Sum) (Guaranteed Maximum Price) prior to this Change Order was	$ _____
The (Contract Sum) (Guaranteed Maximum Price) will be (increased) (decreased) (unchanged) by this Change Order in the amount of	$ _____
The new (Contract Sum) (Guaranteed Maximum Price), including this Change Order, will be	$ _____
The Contract Time will be (increased) (decreased) (unchanged) by	( ) days.
The new date of Substantial Completion will be	

NOTE: This Change Order does not include adjustments to the Contract Sum or Guaranteed Maximum Price, or the Contract Time, that have been authorized by Construction Change Directive until the cost and time have been agreed upon by both the Owner and Contractor, in which case a Change Order is executed to supersede the Construction Change Directive.

NOT VALID UNTIL SIGNED BY THE ARCHITECT, CONTRACTOR AND OWNER.

ARCHITECT *(Firm name)*	CONTRACTOR *(Firm name)*	OWNER *(Firm name)*
SIGNATURE	SIGNATURE	SIGNATURE
PRINTED NAME AND TITLE	PRINTED NAME AND TITLE	PRINTED NAME AND TITLE
DATE	DATE	DATE

ATTACHMENT "D"

AIA® Document G704™ – 2017

Certificate of Substantial Completion

PROJECT: *(name and address)*	**CONTRACT INFORMATION:** Contract For: Date:	**CERTIFICATE INFORMATION:** Certificate Number: Date:
OWNER: *(name and address)*	**ARCHITECT:** *(name and address)*	**CONTRACTOR:** *(name and address)*

The Work identified below has been reviewed and found, to the Architect's best knowledge, information, and belief, to be substantially complete. Substantial Completion is the stage in the progress of the Work when the Work or designated portion is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The date of Substantial Completion of the Project or portion designated below is the date established by this Certificate.
(Identify the Work, or portion thereof, that is substantially complete.)

ARCHITECT *(Firm Name)*	SIGNATURE	PRINTED NAME AND TITLE	DATE OF SUBSTANTIAL COMPLETION

WARRANTIES
The date of Substantial Completion of the Project or portion designated above is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below:
(Identify warranties that do not commence on the date of Substantial Completion, if any, and indicate their date of commencement.)

WORK TO BE COMPLETED OR CORRECTED
A list of items to be completed or corrected is attached hereto, or transmitted as agreed upon by the parties, and identified as follows:
(Identify the list of Work to be completed or corrected.)

The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Unless otherwise agreed to in writing, the date of commencement of warranties for items on the attached list will be the date of issuance of the final Certificate of Payment or the date of final payment, whichever occurs first. The Contractor will complete or correct the Work on the list of items attached hereto within ( ) days from the above date of Substantial Completion.

Cost estimate of Work to be completed or corrected: $

The responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work, insurance, and other items identified below shall be as follows:
(Note: Owner's and Contractor's legal and insurance counsel should review insurance requirements and coverage.)

The Owner and Contractor hereby accept the responsibilities assigned to them in this Certificate of Substantial Completion:

CONTRACTOR *(Firm Name)*	SIGNATURE	PRINTED NAME AND TITLE Leroy San Miguel Asst. Supt. Fac. & Oper.	DATE
Northside ISD OWNER *(Firm Name)*	SIGNATURE	PRINTED NAME AND TITLE	DATE

ATTACHMENT "E"

ACORD

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
Month/Date/Year

PRODUCER	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.	
	INSURERS AFFORDING COVERAGE	**NAIC #**
INSURED	INSURER A: Name of Insurance Company	
	INSURER B: Name of Insurance Company (if applicable)	
	INSURER C: Name of Insurance Company (if applicable)	
	INSURER D: Name of Insurance Company (if applicable)	
	INSURER E: Name of Insurance Company (if applicable)	

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	ADD'L INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
	☐	**GENERAL LIABILITY** ☒ COMMERICAL GENERAL LIABILITY ☐ CLAIMS MADE ☒ OCCUR ☐ _____ ☐ _____ GEN'L AGGREGATE LIMIT APPLIES PER: ☒ POLICY ☐ PROJECT ☐ LOC	Enter Policy #	Enter Effective Date	Enter Expiration Date	EACH OCCURENCE	$
						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
						MED EXP (Any one person)	$
						PERSONAL & ADV INJURY	$
						GENERAL AGGR TE	$
						PRO UCTS COMP/OP AGG	$
							$
	☐	**AUTOMOBILE LIABILITY** ☐ ANY AUTO ☐ ALL OWNED AUTOS ☐ SCHEDULED AUTOS ☐ HIRED AUTOS ☐ NON-OWNED AUTOS ☐ _____ ☐ _____	Enter Policy #	Enter Effective Date	Enter Expiration Date	COMBINED SINGLE LIMIT (Each Occurrence)	$1
						BODILY INJURY (Per person)	$
						BODILY INJURY (Per accident)	$
						PROPERTY DAMAGE (Per accident)	$
	☐	**GARAGE LIABILITY** ☐ ANY AUTO ☐ _____	Enter Policy # (if required)	Enter Effective Date	Enter Expiration Date	AUTO ONLY - EA ACCIDENT	$
						OTHER THAN AUTO ONLY: EA ACC	$
						AGG	$
	☐	**EXCESS/UMBRELLA LIABILITY** ☐ OCCUR ☐ CLAIMS MADE ☐ DEDUCTIBLE ☐ RETENTION $_____	Enter Policy # (if required)	Enter Effective Date	Enter Expiration Date	EACH OCCURRENCE	$
						AGGREGATE	$
							$
							$
							$
	☐	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below	Enter Policy #	Enter Effective Date	Enter Expiration Date	☐ WC STATUTORY LIMITS ☐ OTHER	
						E.L. EACH ACCIDENT	$
						E.L. DISEASE - EA EMPLOYEE	$
						E.L. DISEASE - POLICY LIMIT	$
	☐	**OTHER**					

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

CERTIFICATE HOLDER	CANCELLATION
	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE INSURER AFFORDING COVERAGE WILL ENDEAVOR TO MAIL _____ DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.
	AUTHORIZED REPRESENTATIVE

IMPORTANT

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

DISCLAIMER

The Certificate of Insurance on the reverse side of this form does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder, nor does it affirmatively or negatively amend, extend or alter the coverage afforded by the policies listed thereon.

ATTACHMENT "F"

Northside Independent School District
Facilities, Maintenance & Operations
5900 Evers Road
San Antonio, Texas 78238-1699
Phone (210) 397-1200 FAX (210) 257-1212

Warranty Transmittal Letter

NISD Use Only	
Facility	
Facility ID #	
NISD Maint WO #	
Work Order Date	
Engineer/Architect	
Contractor	
Bid Number	
Substantial Completion Date	

CAMPUS: _____

PROJECT: _____

DATE: _____

The item below was identified by NISD personnel during the project warranty period.

PROBLEM DESCRIPTION	

SUBMITTED BY:	**MAINTENANCE TO FACILITIES BY:**
NAME: **DEPARTMENT:**	**NAME:**

REMARKS / CORRECTIVE ACTION	

NORTHSIDE FACILITIES CONSTRUCTION / ENGINEERING DEPARTMENT USE ONLY

TO BE SIGNED BY NISD CONSTRUCTION INSPECTOR OR PROJECT MANAGER UPON COMPLETION OF WORK

PRINTED NAME: _____ **SIGNATURE:** _____ **DATE:** _____

NISD CONSTRUCTION INSPECTOR

REQUEST FOR NISD MAINTENANCE SUPPORT:	**MAINTENANCE SUPPORT APPROVAL:**
TO BE SIGNED UPON DETERMINATION THAT IN THE BEST INTEREST OF NISD, MAINTENANCE IS TO COMPLETE ABOVE ITEM(s). SEE REMARKS, IF ANY.	**SIGNATURE:** _____ DATE: _____ ASSISTANT SUPERINTENDENT OF FACILITIES & OPERATIONS
SIGNATURE: _____ DATE: _____ NISD DIRECTOR OF FACILITIES CONSTRUCTION OR NISD DIRECTOR OF ENGINEERING SERVICES	**SIGNATURE:** _____ DATE: _____ DIRECTOR OF MAINTENANCE & OPERATIONS

ATTACHMENT "G"

Northside ISD Facilities Operations Project Closeout Checklist

PM: _____

Prime: _____ **/ GC:** _____ **Project #** _____

PROJECT NAME: _____

CONTRACT CLOSEOUT DELIVERABLES*	RESPONSIBLE PARTY	COMPLETION DATE	COMMENTS
FINANCIAL / AIA DOCUMENTS: Original Not A Copy			
G702/G703 - Application and Certificate for Payment. Submit FINAL Application for Payment.			
G706 - Contractor's Affidavit of Payment of Debts and Claims			
G706A - Contractor's Affidavit of Release of Liens			
G707 - Consent of Surety to Final Payment with Power of Attorney			
Final Change Order Log *(Log must show all allowances with zero balance)*			
RECORD DRAWINGS: (1) Set on Double-sided 4 mil Mylar & Electronic files **			
Architectural Plans			
Kitchen Plans			
Landscaping Plans			
Civil Plans			
Structural Plans			
HVAC & Plumbing Plans			
Controls Plans & Fire Sprinkler Plans ***			
Electrical			
Fire Alarm (As Builts) *** (1) copy to NISD Maint. & (1) copy to Archives			
Record Copy of Software w/Fire Alarm Panel Password***			
OTHER HARD COPY DOCUMENTS			
Specifications w/ all addenda & change orders (MS Word) Electronic Files & Project Manuals			
Set of approved submittals with A/E comments (including all shop drawings)			
Completed Punch List verified by A/E and letter			
Project Directory (List of Subs and Supplies by Division)			
Extended Warranty Spreadsheet with Equipment Log (Signed off by Prime and GC)			
Testing & Balancing Reports, including Water, Air & Field reports			
Final Commissioning Report			
Electrical Coordination Study			
Electrical Systems Test Report (Thermographic/Infrared Survey)			
Voice & Data Testing			
Telecommunications Testing/Certification			
Backflow Preventer Fireline Test Report			
Water Chlorination Test			
Painting Schedule/Colorwheel for exterior and interior spaces			
State Boiler Certificate/Inspection Report			
State Elevator Certificate/Inspection Report			
Fire Alarm Installation Certificate (FML-009A) - (1) copy to NISD Maint. & (1) posted at the Fire Alarm Control Panel ***			
Fire Alarm Certification / Completion Record *** (4) pg document from NFPA 72, fig. 4.5.2.1 *** (1) copy to NISD Maint. & (1) copy to Archives			
Maintenance & Operation manuals on all equipment (Division 2-28)			
Facility Data Sheet			
Facilities Project Information Sheet (Additions/New Construction)			
AFFIDAVITS & NOTORIZED DOCUMENTS			
Asbestos free affidavit by Contractor on form ***			
Asbestos free affidavit by Prime Consultant on letterhead			
Short Term Worker / Contractor Asbestos Notification of form ***			
Warranties from General Contractor; SubContractor and Suppliers provide duplicated notarized copies (including 2 year roof warranties, Siemens and Cabling Warranty)			
G704 - Certificate of Substantial Completion			
AGENCIES FORM & DOCUMENTS			
TEA: "Certification of Project Compliance" from A/E			
TDLR "Closed with Compliance" letter. Plan review & inspection worksheets			
Original "Certificate of Occupancy" and/or "Letter from City"			
OVERSTOCK ITEMS			
Surplus materials and contract specified Overstock materials delivered to Maintenance (Paint, VCT, Ceiling Tiles, Fuses, etc.)			
Overstock Keys			

***** Final payment cannot be issued to the contractor until all documents have been received by the Owner and verified by the Prime Consultant. Confirm with Owner software compatibility.

****** Partial retainage may be held until A/E Team has received record drawings.

******* These documents are generated by the Contractor and are to be delivered to the Prime Consultant.

O - Owner(NISD) **P** - Prime Consultant **C** - Contractor

_____
Warranty & Closeout Coordinator Date

_____
Director of Facilities & Construction Date

_____
Executive Director of Construction & Engineering Date

_____
Director of Engineering Date

_____
Asst. Supt. for Facilities & Operations Date

ATTACHMENT "H"

Closing Documents
Required of
General Contractor

Project No:
Contractor:
Contract Date:

Tab	Sub-Contractor	Warrantees Mat.	Warrantees Labor	Release of Lien		Payment of Debts		Consent of Surety		Cert. of Occup.
A				G706A		G706		G707		
B				G706A		G706		G707		
C				G706A		G706		G707		
D				G706A		G706		G707		
E				G706A		G706		G707		
F				G706A		G706		G707		
G				G706A		G706		G707		
H				G706A		G706		G707		
I				G706A		G706		G707		
J				G706A		G706		G707		
K				G706A		G706		G707		
L				G706A		G706		G707		
M				G706A		G706		G707		
N				G706A		G706		G707		
O				G706A		G706		G707		
P				G706A		G706		G707		
Q				G706A		G706		G707		
R				G706A		G706		G707		
S				G706A		G706		G707		
T				G706A		G706		G707		
U				G706A		G706		G707		
V				G706A		G706		G707		
W				G706A		G706		G707		
X				G706A		G706		G707		
Y				G706A		G706		G707		
Z				G706A		G706		G707		

ATTACHMENT "I"

Closing Documents
Required of
Sub-Contractors

Project No:
Sub-Contractor:
Contract Date:

Sub-Contractor's Identification			Tab-	
List of Suppliers	Release of Lien		Warrantees	
			Equip.	Labor
	G706A			
	G706A			
	G706A			
	G706A			
	G706A			
	G706A			
	G706A			
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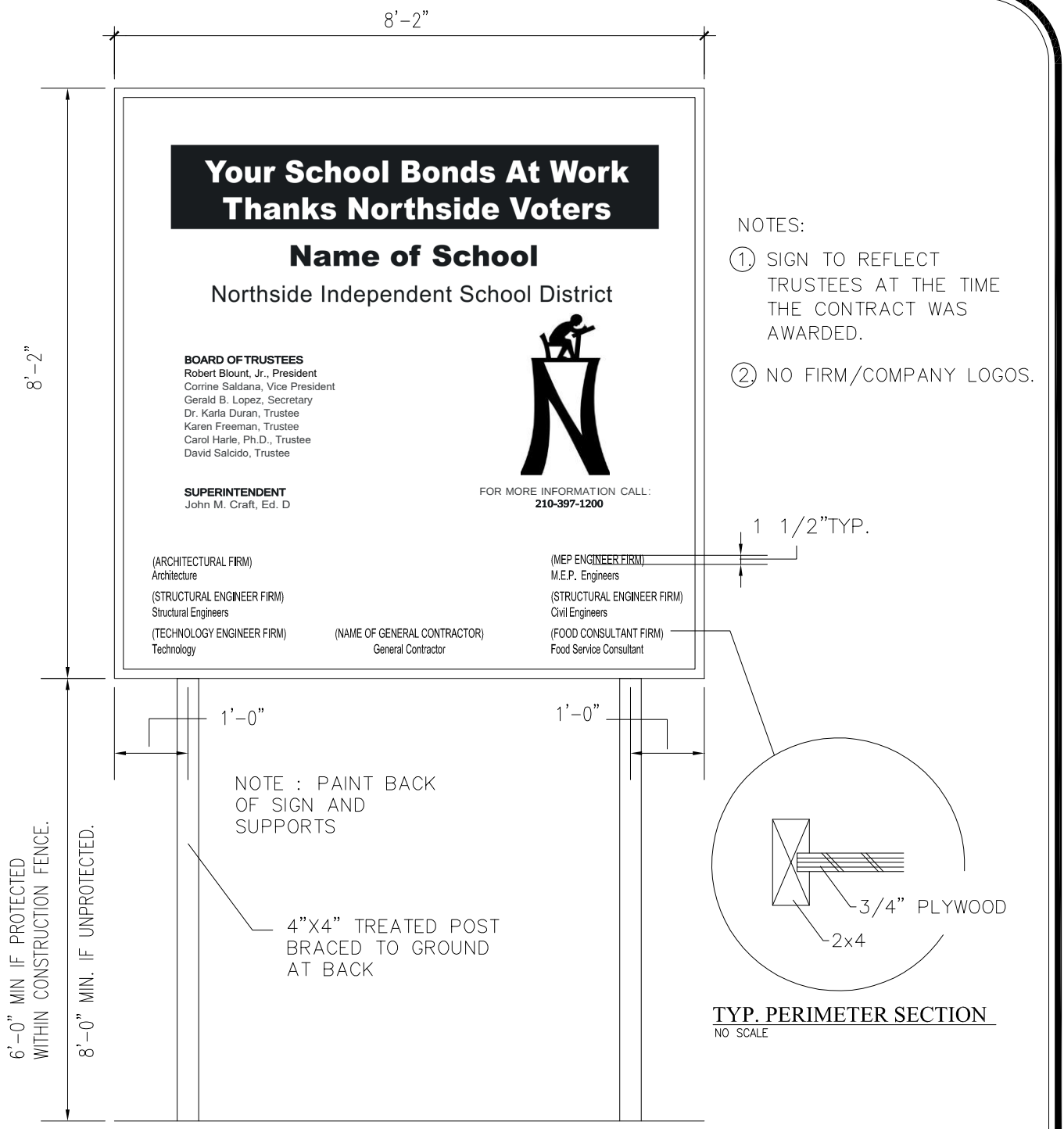
ATTACHMENT "J"



TYP. PERIMETER SECTION
NO SCALE

FRONT ELEVATION
NOT TO SCALE

PROJECT SIGN
FOR
N.I.S.D.

NORTHSIDE INDEPENDENT SCHOOL DISTRICT
5900 EVERS RD.
SAN ANTONIO, TEXAS

Attachment "K"

NORTHSIDE INDEPENDENT SCHOOL DISTRICT
FACILITY DATA SHEET

FACILITY NAME:			DATE:		
DESCRIPTION	**CONDITIONED AREA**	**UNCONDITIONED AREA**	**TOTAL**	**CONSTRUCTION COST**	**COST/ SQ.FT.**
TOTAL					

	ARCHITECT	**CIVIL**	**STRUCTURAL**	**MEP**	**GENERAL CONTRACTOR**

OTHER USEFUL DATA:	**FACILITY CODE:**	
PARKING SPACES AVAILABLE:	**REGULAR :**	**HANDICAPPED:**
TOTAL ACREAGE OF SITE:	**PLATTED**	**UNPLATTED**
ASPHALT SQ.FT. AREA:		
LEGAL DESCR.:		

	LANDSCAPE	**TECHNOLOGY**	**FOOD SERVICE**	**THEATRE & ACOUSTIC**	**BUILDING & FIRE CODE**	**ROOFING**

ATTACHMENT "L"

NORTHSIDE INDEPENDENT SCHOOL DISTRICT

GENERAL CONTRACTOR NON-ASBESTOS MATERIALS CERTIFICATION

This will certify that no asbestos containing materials were used in the construction of this project.

NAME OF PROJECT: Paving Upgrades at Clarence Galm ES

GENERAL CONTRACTOR: _____

CERTIFIED BY: _____

TITLE: _____

DATE: _____

ASBESTOS NOTIFICATION FOR SHORT TERM WORKERS

In accordance with Federal Regulation 40 CFR 763.84(d), short term workers are hereby notified that they may come in contact with asbestos containing building materials while on NISD property. Floor plans identifying known asbestos containing materials, if applicable, will be distributed prior to the beginning of any work.

Contractors will be required to sign a statement certifying that this notification has been provided by NISD.

SHORT TERM WORKER/CONTRACTOR ASBESTOS NOTIFICATION

_____, as a Contractor for Northside Independent
(NAME OF CONTRACTOR)

School District has been given notice that asbestos-containing materials may be encountered during construction/renovation at

Paving Upgrades at Clarence Galm ES
(NAME OF PROJECT)

If applicable, I have received a copy of existing floor plans showing areas known to contain asbestos containing materials. This notification is given in accordance with Federal Regulation 40 CFR 763.84(d).

RECEIVED BY: _____

TITLE: _____

DATE: _____

ATTACHMENT "M"

CERTIFICATE OF INTERESTED PARTIES

FORM 1295

Complete Nos. 1 - 4 and 6 if there are interested parties.
Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

OFFICE USE ONLY

1 Name of business entity filing form, and the city, state and country of the business entity's place of business.

2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the services, goods, or other property to be provided under the contract.

4

Name of Interested Party	City, State, Country (place of business)	Nature of Interest (check applicable)	
		Controlling	Intermediary

5 Check only if there is NO Interested Party. ☐

6 UNSWORN DECLARATION

My name is _____, and my date of birth is _____.

My address is _____, _____, _____, _____, _____.
(street) (city) (state) (zip code) (country)

I declare under penalty of perjury that the foregoing is true and correct.

Executed in _____ County, State of _____ , on the _____ day of _____, 20_____.
(month) (year)

_____
Signature of authorized agent of contracting business entity
(Declarant)

ADD ADDITIONAL PAGES AS NECESSARY

ATTACHMENT "N"

Project Name Paving Upgrades at Clarence Galm ES **Updated 10/20/20**

NISD Pre-Installation or Pre-Construction Meetings
All the meetings shall be coordinated with NISD Project Manager.

Division 2 – Site Work
_____ **Site Work/Drainage/Utilities**
_____ **Drilled Piers**
_____ **Irrigation**
_____ **Landscaping**
_____ **Modular Block Retaining Wall**
_____ **Playground**

Division 3 – Concrete
_____ **Concrete** (place – finish)
_____ **Stucco/Plaster**

Division 4 – Masonry
_____ **Unit Masonry Assemblies:** 2 week minimum prior to starting work in this section. (before lock work starts) **Note: this meeting to be combined with Dampproofing and Storefront, Windows and Glazing.*

Division 5 – Metals and Division 6 - Carpentry
_____ **Structural Steel** General Contractor, Consultant, NISD Inspector, Structural Engineer Erector Sub Contractor, and Testing Lab.
_____ **Finish Carpentry and Millwork.**

Division 7 – Thermal and Moisture Protection
_____ **Dampproofing:** 2 weeks minimum prior to starting work in this section. **Note: this meeting to be combined with Unit Masonry Assemblies and Storefront, Windows and Glazing.*
_____ **Waterproofing**
_____ **Roofing – (Metal, Torch Applied Modified Bitumen Roof System, etc):** 2 weeks min prior to deck installation. GC, Roofing subcontractor, Mechanical Electrical and Plumbing subcontractor, Roofing Materials supplier, roofing consultants, Architect, NISD Roofing Inspector, and NISD Executive Director of Construction and Engineering.
_____ **Sprayed on the Fire Proofing:** 1 week min. prior to starting work in this section.
_____ **Exterior Finish Insulation System EIFS:** 1 week minimum prior to starting work in this section.
_____ **Gypsum Drywall (Includes all stud framing for GWB or sheathing)**

Division 8 – Doors and Windows
_____ **Storefront, Windows and Glazing:** 2 week min prior to starting work in this section**.** *******Note: This meeting to be combined with Unit Masonry Assemblies and Dampproofing.*

Division 9 – Finishes
_____ **Tile – Quarry, Ceramic, and VCT:** 1 week minimum prior to starting work in this section.
_____ **Painting**

Division 22-23 – Mechanical & Division 26 - Electrical
_____ **HVAC/Plumbing/Electrical/Firesprinkler**
_____ **Controls – Controls and HVAC sub at this meeting.**

Division 27 – Telecommunication
_____ **Telecomm and Cabling**
_____ **Security**

ATTACHMENT "O"

Weather Data Sheet for San Antonio, Texas
(Rain related)

Month	Average Rainfall	Average Rain Days*
January	1.96	7
February	1.74	7
March	2.31	8
April	2.42	6
May	4.40	8
June	3.28	7
July	2.41	5
August	2.15	5
September	3.88	7
October	3.75	6
November	2.08	6
December	2.00	7
TOTALS	32.38	81

*Rain days expressed here to the nearest whole day.

Data gathered from the National Weather Service Website at:

https://www.weather.gov/media/ewx/climate/SATmonthlynormals.pdf

As provided in the Contract Documents, the Contractor shall bear the entire economic risk of anticipated weather delays and disruptions (defined in this Attachment "O") and shall not be entitled to any increase in the Contract Price by reason of such delays or disruptions. The data provided in this Attachment O, are to be used for purposes of estimating and are the number anticipated weather delay days that should be recognized by the Contractor in establishing their schedules and proposals. This Attachment "O" sets out the Average Rainfall data and Average Rain days that the Owner will consider to be "anticipated" for purposes of rain delay claims. Extensions of time for weather-related delay will be exclusively governed by the terms outlined in Section 15.1.6.2 the AIA Document A201-2017, General Conditions of the Contract for Construction, as modified by northside Independent School District, Owner for the Project.

ATTACHMENT "P"

Northside ISD Insurance Checklist

Required by Article 11 of A201-2017 - General Conditions of the Contract for Construction, as modified by Northside Independent School District, Owner of the Project

* Insurance coverages shall be submitted on ACORD Form 25, except for Builder's Risk, which shall be displayed on ACORD Form 24 or 27.
* All insurance policies shall be underwritten by a company with a rating of not less than A-VIII as published in the A.M. Best's Key Rating Guide.
* All insurance shall be written on an occurrence basis, if available.
* The Description of Operations section of the Certificates for Primary Policies (**General Liability, Automobile Liability, Umbrella Liability** and **Worker's Compensation/Employer's Liability)** should not reference any project, as these policies are not project-specific. The documents for these policies will be kept on file for use on all projects until any of the policies change or expire so that you do not have to submit them with every contract.
* If the Builder's Risk policy is specific to the project, it should reference the project number and name. Otherwise, a "general" certificate may be issued and kept on file as described above for the Primary Policies.
* Copies of each required endorsement must be included, along with a Schedule of Endorsements for each policy.
* Northside ISD's address should appear as follows so that renewals and notices can be properly routed from our mailroom:

Northside Independent School District
Facilities Construction & Engineering
5900 Evers Road
San Antonio, TX 78238

Commercial General Liability (article 11.1.1.2)

- ☐ $1,000,000 each occurrence;
- ☐ $2,000,000 general aggregate;
- ☐ $1,000,000 each person for personal and advertising injury;
- ☐ $1,000,000 each occurrence for Products and Completed Operations;
- ☐ $2,000,000 for Products and Completed and Completed Operations General Aggregate;
- ☐ $1,000,000 each occurrence for independent contractors property damage;
- ☐ $2,000,000 for contractual liability property damage aggregate.
- ☐ Policy issued upon an "occurrence" basis.

* ***Required endorsements:***
- ☐ Primary and Noncontributory;
- ☐ Additional Insured;
- ☐ Waiver of Subrogation;
- ☐ 20-day notice of cancellation.

Automobile Liability (article 11.1.1.3)

- ☐ All vehicles (any auto) owned by, hired by or used on behalf of the Contractor;
- ☐ $1,000,000 combined single limit;
- ☐ $1,000,000 per accident.

* ***Required endorsements:***
- ☐ Primary and Noncontributory;
- ☐ Additional Insured;
- ☐ Waiver of Subrogation;
- ☐ 20-day notice of cancellation.

Umbrella Liability (article 11.1.1.4)

- ☐ $5,000,000 each occurrence/aggregate.

* ***Required endorsements:***
- ☐ Primary and Noncontributory;
- ☐ Additional Insured;
- ☐ Waiver of Subrogation;
- ☐ 20-day notice of cancellation.

Worker's Compensation (article 11.1.1.7): Statutory limits required, no "alternative" for of insurance shall be permitted.

Employer's Liability (article 11.1.1.1)

- ☐ $1,000,000 each accident;
- ☐ $1,000,000 each employee;
- ☐ $1,000,000 policy limit.
- ☐ If any Proprietor/Partner/Executive Officer/Member is excluded from coverage, describe under "Description of Operations" section of the Certificate.

* ***Required endorsements:***
- ☐ Waiver of Subrogation;
- ☐ 20-day notice of cancellation.

Builder's Risk (article 11.1.1.5)

- ☐ Shall cover the entire Work at the site for the full insurable value of the Work, including transit thereto and materials stored offsite and destined to become a part of the Work.
- ☐ Maintained until final payment is made to the Contractor.
- ☐ $500,000 minimum for offsite storage and in-transit material coverage.

* ***Required endorsements:***
- ☐ Permission to Occupy;
- ☐ 20-day notice of cancellation.

ATTACHMENT "P"

Northside ISD Insurance Checklist

(Smaller Projects)

* Insurance coverages shall be submitted on ACORD Form 25.
* All insurance policies shall be underwritten by a company with a rating of not less than A-VIII as published in the A.M. Best's Key Rating Guide.
* All insurance shall be written on an occurrence basis, if available.
* The Description of Operations section of the Certificate should not reference any project, as these policies are not project-specific. The documents will be kept on file for use on all projects until any of the policies change or expire so that you do not have to submit them with every project.
* Copies of each required endorsement must be included, along with a Schedule of Endorsements for each policy.
* Northside ISD's address should appear as follows so that renewals and notices can be properly routed from our mailroom:

Northside Independent School District
Facilities Construction & Engineering
5900 Evers Road
San Antonio, TX 78238

Commercial General Liability

- [ ] $1,000,000 each occurrence;
- [ ] $2,000,000 general aggregate;
- [ ] $1,000,000 each person for personal and advertising injury;
- [ ] $1,000,000 each occurrence for Products and Completed Operations;
- [ ] $2,000,000 for Products and Completed and Completed Operations General Aggregate;
- [ ] $1,000,000 each occurrence for independent contractors property damage;
- [ ] $2,000,000 for contractual liability property damage aggregate.
- [ ] Policy issued upon an "occurrence" basis.

* ***Required endorsements:***

- [ ] Primary and Noncontributory;
- [ ] Additional Insured;
- [ ] Waiver of Subrogation;
- [ ] 20-day notice of cancellation.

Automobile Liability

- [ ] All vehicles (any auto) owned by, hired by or used on behalf of the Contractor;
- [ ] $1,000,000 combined single limit;
- [ ] $1,000,000 per accident.

* ***Required endorsements:***

- [ ] Primary and Noncontributory;
- [ ] Additional Insured;
- [ ] Waiver of Subrogation;
- [ ] 20-day notice of cancellation.

Umbrella Liability

- [ ] $5,000,000 each occurrence/aggregate.

* ***Required endorsements:***

- [ ] Primary and Noncontributory;
- [ ] Additional Insured;
- [ ] Waiver of Subrogation;
- [ ] 20-day notice of cancellation.

Worker's Compensation: Statutory limits required, no "alternative" for of insurance shall be permitted.

Employer's Liability

- [ ] $1,000,000 each accident;
- [ ] $1,000,000 each employee;
- [ ] $1,000,000 policy limit.
- [ ] If any Proprietor/Partner/Executive Officer/Member is excluded from coverage, describe under "Description of Operations" section of the Certificate.

* ***Required endorsements:***

- [ ] Waiver of Subrogation;
- [ ] 20-day notice of cancellation.

ATTACHMENT "P"

Northside ISD Insurance Checklis

Required by Article 11 of A201-2017 - General Conditions of the Contract for Construction, as modified by Northside Independent School District, Owner of the Project

* Insurance coverages shall be submitted on ACORD Form 25, except for Builder's Risk, which shall be displayed on ACORD Form 24 or 27.
* All insurance policies shall be underwritten by a company with a rating of not less than A-VIII as published in the A.M. Best's Key Rating Guide.
* All insurance shall be written on an occurrence basis, if available.
* The Description of Operations section of the Certificates for Primary Policies (**General Liability, Automobile Liability, Umbrella Liability** and **Worker's Compensation/Employer's Liability)** should not reference any project, as these policies are not project-specific. The documents for these policies will be kept on file for use on all projects until any of the policies change or expire so that you do not have to submit them with every contract.
* If the Builder's Risk policy is specific to the project, it should reference the project number and name. Otherwise, a "general" certificate may be issued and kept on file as described above for the Primary Policies.
* Copies of each required endorsement must be included, along with a Schedule of Endorsements for each policy.
* Northside ISD's address should appear as follows so that renewals and notices can be properly routed from our mailroom:

Northside Independent School District
Facilities Construction & Engineering
5900 Evers Road
San Antonio, TX 78238

Commercial General Liability (article 11.1.1.2)

- ☐ $1,000,000 each occurrence;
- ☐ $2,000,000 general aggregate;
- ☐ $1,000,000 each person for personal and advertising injury;
- ☐ $1,000,000 each occurrence for Products and Completed Operations;
- ☐ $2,000,000 for Products and Completed and Completed Operations General Aggregate;
- ☐ $1,000,000 each occurrence for independent contractors property damage;
- ☐ $2,000,000 for contractual liability property damage aggregate;
- ☐ Policy issued upon an "occurrence" basis.

* ***Required endorsements:***
- ☐ Primary and Noncontributory;
- ☐ Additional Insured;
- ☐ Waiver of Subrogation;
- ☐ 20-day notice of cancellation.

Automobile Liability (article 11.1.1.3)

- ☐ All vehicles (any auto) owned by, hired by or used on behalf of the Contractor;
- ☐ $1,000,000 combined single limit;
- ☐ $1,000,000 per accident.

* ***Required endorsements:***
- ☐ Primary and Noncontributory;
- ☐ Additional Insured;
- ☐ Waiver of Subrogation;
- ☐ 20-day notice of cancellation.

Umbrella Liability (article 11.1.1.4)

- ☐ $5,000,000 each occurrence/aggregate.

* ***Required endorsements:***
- ☐ Primary and Noncontributory;
- ☐ Additional Insured;
- ☐ Waiver of Subrogation;
- ☐ 20-day notice of cancellation.

Worker's Compensation (article 11.1.1.7): Statutory limits required, no "alternative" for of insurance shall be permitted.

Employer's Liability (article 11.1.1.1)

- ☐ $1,000,000 each accident;
- ☐ $1,000,000 each employee;
- ☐ $1,000,000 policy limit.
- ☐ If any Proprietor/Partner/Executive Officer/Member is excluded from coverage, describe under "Description of Operations" section of the Certificate.

* ***Required endorsements:***
- ☐ Waiver of Subrogation;
- ☐ 20-day notice of cancellation.

Builder's Risk (article 11.1.1.5)

- ☐ Shall cover the entire Work at the site for the full insurable value of the Work, including transit thereto and materials stored offsite and destined to become a part of the Work;
- ☐ Maintained until final payment is made to the Contractor;
- ☐ $500,000 minimum for offsite storage and in-transit material coverage.

* ***Required endorsements:***
- ☐ Permission to Occupy;
- ☐ 20-day notice of cancellation.

ATTACHMENT "Q"

AGREEMENT FOR STORING MATERIALS OFF-SITE

This agreement is entered into this _____ day of _____, 2023, between the Northside Independent School District and _____(hereafter called the "Contractor"), for Project RFCSP# _____ and name_____
_____.

WHEREAS, the Contractor desires to store certain materials off the site for use in construction, and desires to obtain payment for materials properly stored at _____
_____in accordance with contract provisions as if they were properly stored on the site. Materials are valued at $_____ and located on pay application #_____.

Northside Independent School District agrees to allow off-site storage of materials for the above name project, provided the following conditions are complied with by the Contractor:

1. Contractor must submit an affidavit identifying material and equipment, providing photographic evidence of material and equipment, and acknowledging responsibility for the material and equipment.
2. With each monthly request for payment, Contractor must submit a report to the Architect and Owner listing the material and equipment already paid for and still stored off site, including photographic evidence of same.
3. Contractor must provide warehouse and photographic records, receipts and invoices to verify quantities and their disposition.
4. Material and equipment must be stored in accordance with manufacturer's instructions, including proper temperature and humidity controls.
5. Material and equipment must be physically separated and marked for the Project.
6. Material and equipment must be inspected at the warehouse by the Architect or Owner who must be satisfied with the security, control, maintenance and preservation measures. Architect and Owner may inspect the material and equipment at any time during normal warehouse hours.
7. Contractor must, at no additional cost to the Owner, provide Builder's Risk insurance coverage identified in Attachment "P" of the Owner's Special Conditions to cover material and equipment while in storage, and the transit from the off-site storage warehouse to the Project site. **If the offsite stored materials are valued in excess of the policy coverages, the Contractor will be required to provide additional coverage at no cost to the district or defer request for payment on such material until the material is onsite.**
8. The Owner reserves the right to reject material and equipment which do not meet Contract requirements regardless of any payment previously made.
9. In the event of termination of the Contract or default by the Contractor, the material and equipment stored off site must be immediately turned over to the Owner by delivery to the Project site or other location determined by the Owner.

This Agreement does not alter the General or Supplemental Conditions of the above name contract. Northside Independent School District will terminate this Agreement for failure of the Contractor to comply with the conditions stated above.

X _____
General Contractor

X _____
Leroy San Miguel
Assistant Superintendent, NISD

Northside ISD
Off-Site Stored Materials
Checklist

General Information

- ☐ Materials must be stored in Bexar County.
- ☐ At beginning of calendar month, relay information to NISD Project Manager regarding requests for off site stored materials.
- ☐ By 15th of month if approved by NISD, submit Off-Site Storage Agreement and supporting documents to NISD for only those materials that were deemed acceptable.

Agreement Submittal

- ☐ "Agreement for Storing Materials Off-Site" Revision Feb 21, 2023 completed and signed by General Contractor.
- ☐ Affidavit listing material and equipment with photos and acknowledging responsibility for said materials.
- ☐ Provide warehouse and photographic records, receipts and invoices to verify quantities matching the amount listed on corresponding pay application. Photographs should show the materials separated and marked for the project.
- ☐ Provide a report listing the material and equipment already paid for and still stored off site.

Required Insurance (If Applicable)

- ☐ If off-site stored material exceeds the amount indicated on Attachment "P" of Owner's Special Conditions, the Builder's Risk Policy for off-site storage must be increased and reported on ACORD 27.

ATTACHMENT "R"

PRE-CONSTRUCTION CONFERENCE

Recommended Agenda

A. Introduction of all attendees
- Distribute general information attachments

B. Discussion of Project Responsibilities
- Team Concept - NISD, Architect/Engineer, Contractor
- Owner's Responsibility
- Director of Facilities Construction
- Architect/Engineer Responsibility
- Construction Administration
- Contractor Responsibility
  - Protects Owner's interest
  - Coordinate all construction
  - Manage all construction
- School Personnel
  - Principal
  - Staff

C. Project Restrictions

Access to site
- Office and Trailer Location
- Construction Parking
- Material Storage Area
- Temporary Fencing
- Top Soil Stockpile Area
- Disposal of Soil
- Not allowed to use school restrooms or cafeteria
- Restrict workmen in existing school
- Temporary Utilities
  - Power
  - Water
- Security and Protection
  - OFCI Storage Area
- Harassment
- Dress Code
- Tobacco Use
- Illegal Drugs and Alcohol

D. Permits, Licenses, Certificates, and Fees
- General Contractor Bonds
- Builder's Risk Insurance
- Liability and Worker's Compensation Insurance
- Licenses
- Building Permits
- Fees

ATTACHMENT "R"

E. Submittals
- Review Procedure
  - Number and Type of Copies
  - Routing
  - Owner's Copies
  - Submittal Log
- Color Schedule
- Substitutions
- Samples

F. Project Meetings
- Regular Bi-Weekly Meetings
- Agenda
- Minutes

G. Construction Phasing
- New Schools
  - Early Completion
- Temporary Partitions
- Construction Phasing
  - Existing Equipment Storage and Relocation
  - Agency Inspections
  - School Occupancy
- Utility Shutdown/Changeover

H. Inspections/Observations
- A/E Observations
- Contractor's Quality Control
- Agency Inspections
- Concealed Space Observation
- Substantial Completion Inspection
  - Contractor
  - A/E
- Future Maintenance
- System Verification

I. Application and Certificate for Payment
- Schedule of Values
- Application for Payment
  - Match Schedule of Values
  - Review Procedure
- Final Pay Application
  - Pre-Requisites

J. Schedules
- Construction Schedule
  - Monthly Revisions

ATTACHMENT "R"

- Construction Delays
- School Staff Support During Workdays

K. Construction Changes
- Control of Construction Changes
- Authority to Issue Changes
- Proposed Change Order Procedure
- Change Order

L. Record Documents
- Contractor Responsible to Maintain
  Enforce with subcontractors
- Pre-requisite for final payment

M. Maintenance Manuals
- Contents of Manual
- Arrangement of Information
- Distribution

N. Project Clean-Up
- Periodic and Final Clean-Up

O. Warranty Procedures
- Expectations
- Initiation of Requests
- Acknowledgment of Repairs
- Follow-up Letters

Procedures for NISD ONLINE Background Checks, DPS/FBI Fingerprinting and Badging for Facilities and Operations Contractors

Each company is required to have a Point of Contact. The Point of Contact will be required to email Jennifer McDowall, Northside ISD (NISD) Secretary to the Executive Director of Construction & Engineering at jennifer.mcdowall@nisd.net, with the following information pertaining to their employee or individual self.

- Name of General Contractor **(Legal name) and (Preferred/Alias Name)**
- Title
- Phone number
- Email address

Part 1. NISD Online Background Check

The individual contractor, subcontractor or consultant will be required to complete the **NISD ONLINE Background Check** form. This personal information collected is imperative when verifying the individual in The Texas Department of Public Safety (DPS) System. Click here: NISD ONLINE Background Check.

Part 2. DPS/FBI Fingerprinting

Northside ISD (Rhonda Martinez, HR Contract Coordinator) will email each individual contractor, subcontractor or consultant needing to be fingerprinted instructions, with attachments containing a **Local Education Entity (LEE) pass form and a Fingerprint Guide**.

LEE pass information is issued by Texas Department of Public Safety (DPS) to Northside ISD. The **LEE** pass form will provide details needed to schedule fingerprints at one of the **IdentoGo** fingerprinting services locations. If the individual contractor, subcontractor or consultant does not have access to the Internet, an appointment can be scheduled by calling **IdentoGO** at 888-467-2080. Once an appointment is scheduled, **IdentoGo** will email a Pre-Enrolled form containing appointment details to the individual needing to fingerprint. The details include the fee of $38.25 (additional fee for credit card), form of payment accepted and specific documents required to fingerprint. Click here: https://uenroll.identogo.com

Once the individual contractor, subcontractor or consultant is fingerprinted, the fingerprints will be submitted to the Texas Department of Public Safety (DPS) Fact Clearinghouse. The DPS/FBI results will then be reviewed by NISD's Employee Relations Department. The fingerprints will be cleared or non-cleared per NISD Board Policy **CJA (Legal)** (refer to link below).

The individual who is fingerprinted will only be contacted regarding background results when they are not approved to move forward to work on NISD campuses. The background results will only be shared with the individual who fingerprinted. If there is a dispute by the individual in regards to their background check, the individual will need to contact Rhonda Martinez at 210-397-8613. When required, Ms. Martinez will notify the point of contact if the individual is not allowed to move forward working with NISD, however no other information will be shared.

Communication between the Point of Contact and NISD is critical to maintain compliance with DPS and the Texas Education Agency (TEA) requirements. It is imperative and expected that the Point of Contact notify Rhonda Martinez, NISD Contract Coordinator, within 48 hours of the employee no longer working on any specific project with NISD to ensure that NISD will no longer receive information regarding their fingerprints or have access to their personal information. Per Department of Public Safety (DPS), individuals no longer affiliated with the Agency/District should have their fingerprint subscriptions disabled. It is unlawful to view criminal history records for persons who are no longer affiliated with NISD.

***For questions regarding fingerprinting please contact NISD Contract Coordinator; Rhonda Martinez at 210-397-8613 or Rhonda.martinez@nisd.net.

***All Fingerprints must be cleared for employment per Northside ISD Board Policy CJA(Legal)**

https://pol.tasb.org/Policy/Download/184?filename=CJA(LEGAL).pdf

Facilities and Operations: Contractor, Subcontractor and Consultant Badging Procedures

Part 3. NISD Badging

OBJECTIVE: Adopt a comprehensive badging policy that: (a) ensures students / staff / faculty safety as a first priority; (b) complies with at least the minimum requirements of Senate Bill 9: and (c) differentiates between those construction contractor personnel who will have direct contact with students and those who will not.

1. All General Contractors, subcontractors and consultants will be required to complete a NISD online background check and undergo fingerprinting. The HR Employee Relations Department will review the fingerprint results. The fingerprints will be cleared or non-cleared per NISD Board Policy CJA (Legal).

    - Contractors who are "CLEARED" will be issued a **RED District badge.**
    - Contractors who are "NOT CLEARED" will not be allowed to work on District property.

2. Following award of any construction contract, Facilities Construction & Engineering Services (FC&E) Departments along with the Campus Admin Team will meet with the applicable General Contractor to review the limits of construction on campus and establish those areas which pose an increased risk of direct student contact due to planned construction access to or through campus-occupied existing facilities. This "Badge Executing Committee" will review, line by line, the list of subcontractors proposed for use on the construction project and jointly agree/designate those subcontractors who have an increased probability of direct contact with students based on their work proximity within the construction area and campus facilities.

3. Facilities Construction and Engineering Executive Director and/or Assistant Superintendent for Facilities and Operations shall determine if a sub-contractor needs to undergo a NISD online background check and fingerprinting. Those subcontractors judged to have an increased probability of direct contact with students will be required to complete a NISD online background check and undergo fingerprinting. The HR Employee Relations Department will review the fingerprint results. The fingerprints will be cleared or non-cleared per NISD Board Policy CJA (Legal).

    - Subcontractors who are "CLEARED" **will not be issued a District badge**
    - Subcontractors who are "NOT CLEARED" will not be allowed to work on District property.

4. In addition to the above procedures (item 3), All Foreman / Superintendents / Work leaders working for the General Contractor's subcontractors will be required to complete a NISD online background check and undergo fingerprinting. The HR Employee Relations Department will review the fingerprint results. The fingerprints will be cleared or non-cleared per NISD Board Policy CJA (Legal).

    - Those who are "CLEARED" will be issued a **RED District badge**.
    - Those who are "NOT CLEARED" will not be allowed to work on District property.

5. Any contractor employee who needs to work outside the controlled construction area (i.e., in occupied campus facilities and not required to be badged) will be allowed to do so only under the continuous direct physical supervision of either a contractor employee with a **RED District badge**, a District employee, or a contracted law enforcement officer. Note: The District employee noted above will most likely work as a member of the Facilities Construction and Engineering Services Departments.

6. Consultants, Architects, Engineers, etc. will be required to complete a NISD online background check and undergo fingerprinting as determined by Facilities Construction and Engineering Executive Director and/or Assistant Superintendent for Facilities and Operations. The HR Employee Relations Department will review the fingerprint results. The fingerprints will be cleared or non-cleared per NISD Board Policy CJA (Legal).

    - Consultants who are "CLEARED" will be issued an **ORANGE District badge**.
    - Consultants who are "NOT CLEARED" will not be allowed to work on District property.

7. All badges will have an Expiration Date of 1 year from date of issue unless otherwise specified. Following completion of the project(s) which formed the basis for the issuance of contractor badges, the District, at its option, may collect badges earlier - upon completion of the designated project(s) - rather than at the end of the badge authorization period.

8. Contractor personnel reviewed by the District and denied a badge will continue to be denied a badge under this badging policy even if they are designated to work only in the controlled construction area.

9. Per Board Policy CJA (Legal) "Direct contact with students" is the contact that results from activities that provide substantial opportunity for verbal or physical interaction with students that is not supervised by a certified educator or other professional district employee. *Per Texas Education Code (TEC), §22.0834 and §22.08341 state that a contractor that provides services to a school district or charter school must be fingerprinted before beginning work, if the contractor 1) will have continuing duties related to the contracted services, and 2) will have the opportunity for direct contact with students.

TABLE OF CONTENTS
SITE CIVIL SPECIFICATIONS
PAVING UPGRADES AT CLARENCE GALM ES
NORTHSIDE ISD

The latest edition of the following Specifications are referenced into the Specifications for this project:

City of San Antonio Standard Specifications (Public ROW Areas)

SECTION 01 21 00

ALLOWANCES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. The section includes administrative and procedural requirements governing allowances.
   1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.

B. Types of allowances include the following:
   1. Contingency allowances.

C. Related Sections include the following:
   1. Divisions 27 through 28.

1.3 SELECTION AND PURCHASE

A. At the earliest practical date after ward of the Contract, advise Engineer of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

B. At Engineer's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

C. Purchase products and systems selected by Engineer from the designated supplier.

1.4 SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.5 COORDINATION

A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.6 CONTINGENCY ALLOWANCES

A. Use the contingency allowance only as directed by Engineer for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.

B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.

C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit margins.

D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

PART 2 - PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on deliver for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPERATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

A. Allowance No. 1: General Contingency Allowance of $50,000.00

END OF SECTION 01 21 00

SECTION 01 22 00

UNIT PRICES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Summary includes administrative and procedural requirements for unit prices. Contractor shall demolish existing device. Install new device running new infrastructure cabling from device to MDF/IDF rooms using existing pathways for all unit pricing items.

1.3 DEFINITIONS

A. Unit price is a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

A. Unit prices include all necessary material and associated components for a complete installation, plus cost for delivery, insurance, applicable taxes, overhead, and profit.

B. Measurement and payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those sections.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Selections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 SCHEDULE OF UNIT PRICES

1. Unit cost per square foot (SF) to demolish and haul off / dispose of properly of concrete sidewalk.
2. Unit cost per linear foot (LF) to demolish and haul off / dispose of properly of concrete curb.
3. Unit cost per lump sum (LS) to demolish and haul off / dispose of properly of sidewalk drain.

4. Unit cost per square foot (SF) to demolish and haul off / dispose of properly of concrete approach.
5. Unit cost per square yard (SY) to demolish and haul off / dispose of properly of asphalt pavement.
6. Unit cost per square yard (SY) to demolish and haul off / dispose of properly of asphalt milling (2”).
7. Unit cost per cubic yard (CY) to demolish and haul off / dispose of properly of channel excavation.
8. Unit cost per square yards (SY) to provide and Install 6” subgrade.
9. Unit cost per square yard (SY) to provide and install 8” flexible base.
10. Unit cost per square yard (SY) to provide and install 2” type “D” hot mix.
11. Unit cost per square yard (SY) to provide and install 6” concrete pavement per Detail #2, Sheet C3.5.
12. Unit cost per square yard (SY) to provide and install 5” concrete pavement per Detail #2, Sheet C3.4.
13. Unit cost per square yard (SY) to provide and install commercial driveway per Details, Sheet C3.8.
14. Unit cost per each (EA) to provide and install curb ramp per Detail #12, Sheet C3.5.
15. Unit cost per square yard (SY) to provide and install concrete sidewalk per Detail #6, Sheet C3.5.
16. Unit cost per linear foot (LF) to provide and install concrete curb per Detail #3, Sheet C3.6.
17. Unit cost per square yard (SY) to provide and install 2” HMAC pavement for drive lanes per Detail #1, Sheet C3.5.
18. Unit cost per square yard (SY) to provide and install 2” HMAC pavement for parking spaces per Detail #1, Sheet C3.5.
19. Unit cost per each (EA) to provide and install concrete sidewalk drain per Details, Sheet C3.6.
20. Unit cost per square yard (SY) to provide and install concrete flume per Details, Sheet C3.4.
21. Unit cost per square yard (SY) to provide and install concrete rip rap (4” thick) per Details, Sheet C3.4
22. Unit cost per linear foot (LF) to remove and replace fire lane marking per Detail #10, Sheet C3.5
23. Unit cost per linear foot (LF) to provide and install parking lot striping per Details, Sheet C3.9
24. Unit cost per cubic yard (CY) to provide and install topsoil.
25. Unit cost per square yard (SY) to provide and install Sod.
26. Unit cost per cubic yard (CY) to provide and install rip-rap rock.
27. Unit cost per linear foot (LF) to provide and install tree protection fence.
28. Unit cost per linear foot (LF) to provide and install silt fencing.
29. Unit cost per square yard (SY) to provide and install construction entrance / exit.
30. Unit cost per each (EA) to provide and install concrete washout pit.
31. Unit cost per linear foot (LF) to provide and install gravel filter bags.
32. Unit cost per each (EA) to provide and install LED flood lights with brackets (unit price with labor).
33. Unit cost per each (EA) to provide and install LED fixture area (shoebox) with brackets (unit price with labor).
34. Unit cost per lump sum (LS) to adjust manhole top of the grease trap.

END OF SECTION 01 22 00

SECTION 01 23 00

Alternates

PART 1 GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Execute accepted alternates under the same conditions as other work of the Contract.

C. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate No.1: Visitor Parking & Sidewalk

Combination of pavement replacement and seal coating of existing pavement along the student pickup/drop-off lane. Includes replacement of existing curb along Saxonhill Drive. Addition of

concrete channels and sidewalk drains along Saxonhill Drive. Installation of two sidewalk drains that will drain into Saxsonhill Drive.

B. Alternate No. 2: Surface Courts / Drainage Improvements

Blacktop area and basketball courts behind gym to be replaced in combination with asphalt pavement replacement. Seal coating of existing asphalt. Striping of blacktop area and basketball courts. Rerading of existing channel as shown in sheet C1.3, C2.3, and C3.3. Addition of sidewalk drains and cleanout of existing channels along Stanton Drive.

C. Alternate No. 3: Lighting Upgrades

Addition of lighting fixture upgrades and repainting of existing light poles (8) located throughout the site.

END OF SECTION 01 22 00

SECTION 26 00 00

BASIC ELECTRICAL REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Basic Electrical Requirements specifically applicable to Division 26, in addition to Division 01 – General requirements.

B. Code Compliance: The codes, ordinances and standards listed herein will be referred to in the design of the electrical systems. The Engineer will select appropriate sections to be applied in accordance with established engineering principles and practices. Codes, ordinances and standards shall be subject to interpretation and enforcement as provided by the City of San Antonio, Bexar County, state of Texas and federal agencies.

1. The current City of San Antonio Electrical Code, including the 2017 National Electrical Code (NFPA 70)

2. 2018 International Building Code with City of San Antonio amendments.

3. Texas Accessibility Standards (TAS)

4. Accessibility Guidelines (ADAAG) of Title III, Americans with Disabilities Act (ADA) of 2010. Note that ADA is a Federal civil rights law. Enforcement of ADA is by Federal Agencies specified in the act. Owners should obtain appropriate legal counsel to determine methods of compliance for the specific work of this project.

5. Fire Alarm rules of Texas Commission on Fire Protection.

6. Energy Code (IECC 2018).

C Permits and Codes: Obtain and pay for all necessary permits and required inspections. Comply with national, state and municipal laws, codes and ordinances relating to building and public safety. Provide temporary power, lighting and utilities for all trades and construction trailers. Temporary electric shall be in accordance with OSHA construction standards. The OSHA minimum illumination level is 5 footcandles in general construction areas and 10 footcandles in mechanical, electrical and workrooms.

D. Visiting the Jobsite: Visit the site of the proposed construction in order to fully understand the facilities, difficulties and restrictions attending to the execution of the work. No additional compensation will be allowed this contractor for work or items omitted from the original proposal due to his failure to inform himself regarding such matters affecting the performance of the work included herein.

E Terminology: “Provide” “Furnish” and “Install” Unless otherwise noted, the term “furnish” as used in these drawings and specifications is intended to mean procure and deliver to the jobsite in a condition that is ready to fit into the final location. Furnish shall include submittal of shop drawings and procuring any related warrantees, ready to assign to the owner. Unless otherwise noted, the term “install” as used in these drawings and specifications is intended to mean mounting the equipment and permanently affixing it into the designated location and making all necessary final connections so as to place the equipment into service. “Install” shall also include procuring and permanently fixing into place any mounting hardware, fittings and any other appurtenances as required for a complete and workman-like installation as well as performing required tests on the completed installation. “Install” shall also mean documenting the installation, such as operation and maintenance manuals and/or as-installed drawings. Unless otherwise noted, the term “provide” as used in these drawings and specifications is intended to mean both “furnish: and “install”.

F Drawings: Drawings are diagrammatic in nature. Contractor shall confirm dimensions and locations in the field. If conflicting dimensions are shown, use the larger dimension and verify with the Architect. Refer to Architectural plans and elevations for exact locations of light fixtures and mounting heights of wall mounted devices. In case of conflicts between drawings, or specs and drawings, contractor shall request clarifications in writing from the Architect and/or the Engineer, otherwise the more stringent requirement shall be provided.

G Material: Materials shall be new, made in the USA and U.L. listed for the intended use. Material installation shall comply with NEC requirements and the installation of such materials shall be performed by craftsmen skilled in that particular trade.

H Equipment protection: Protect equipment and work from damage during handling and installation until completion of construction.

I Cooperation with other trades: Cooperation with trades of adjacent, related or affected materials or operations and with trades performing continuations of this work under subsequent contracts, is considered a part of this work in order to effect timely and accurate placing of work and to bring together, in proper and correct sequence, the work of such trades. Provide other trades, as required, necessary templates, patterns, setting plans and shop details for the proper installation of the work and for the purpose of coordinating adjacent work. Electrical power connections for mechanical and plumbing equipment are specified under this division unless noted otherwise. Verify electrical characteristics of equipment with Division 22, Division 23 and any other special Divisions (elevators, etc.) before roughing in the electrical connections and energizing the equipment.

J Mechanical/Plumbing/Special Equipment: Maintain adequate clearances around equipment to facilitate proper access for the maintenance of said equipment.

K Access Panels: Provide access panels or doors for devices requiring adjustment. Similarly for junction boxes, pull boxes, etc. that are required to be accessible per code. Appearance of access panels/doors must be approved by the Architect. Panels/doors shall be designed for the fire rating of the wall or ceiling in which they are installed. Access

panels shall be lockable and shall be keyed alike (same key as panels from other divisions)

L Plenums: Plenums may be crowded and not all obstacles may be indicated the drawings. Allow for conduit offsets and pull boxes not indicated on drawings.

M Plaster, gypsum board or other non-accessible ceilings: Contractor shall minimize cutting and patching by installing conduit prior to ceiling/wall/partition cover-up.

N Loss or Damage to Facilities: Contractor shall be responsible for loss or damage to the facilities caused by him and his workmen and shall be responsible for repairing or replacing such loss or damage. Contractor shall send proper notices, make necessary arrangements and perform other services required for the care, protection and in-service maintenance of electrical service for the new facilities. Contractor shall erect temporary barricades, with necessary safety device as required to protect personnel and the general public from injury and shall remove such temporary protection upon completion of work.

0 Clean up: A) Provide for isolation of work areas and daily removal of debris. B) Clean equipment and fixture lenses. C) Touch up paint where required.

1.2 SUBMITTALS

A. Submit under provisions of Division 1.

B. Submit shop drawings and/or product literature for all equipment, switches, conduit, and other significant portions of the work.

C. Submit shop drawings and product data grouped to include complete submittals of related systems, products and accessories in a single submittal.

D. Submit detailed layout of electrical rooms and yards. Record actual locations, sizes, and configurations of equipment connections.

E. Product Data: Submit wiring device manufacturer’s catalog information showing dimensions, configurations, and construction.

F. Manufacturer's installation instructions.

1.3 REGULATORY REQUIREMENTS

A. Where a code or document is referenced, use most current version, unless specifically noted otherwise.

B. Obtain and pay for permits, and request inspections from authority having jurisdiction.

1.4 PROJECT/SITE CONDITIONS

A. Install work in locations shown on Drawings, unless prevented by Project conditions. Contract drawings are diagrammatic only and do not give fully dimensioned locations of various elements of work. Determine exact locations from field measurements.

B. Consider space limitations imposed by contiguous work in selection and locations of equipment and material. Do not provide equipment or material which is not suitable in this respect.

C. Prepare drawings showing proposed rearrangement of Work to meet Project conditions, including changes to Work specified in other sections. Obtain permission before proceeding.

1.5 SEQUENCING AND SCHEDULING

A. Construct Work in sequence under provisions of Division 1.

1.6 TRAINING & INSTRUCTION

A. At time designated by the Owner, provide services of competent representative of the Contractor for period of at least 8 hours to instruct the Owner's representatives in the operation and maintenance of the entire system.

B. Training and instruction of Owners representatives is further discussed in the individual sections. Owner may choose to video tape all or part of such training sessions; Contractor shall allow such recording.

1.7 PENETRATIONS

A. Pipe, conduit or other Division 26 penetrations of floors, rated walls and exterior walls shall be sealed. Such sealant shall conform to the ratings of the walls or floors or as otherwise detailed on the drawings or specifications and shall be per Division 7. Provide and place all sleeves for such penetrations to other trades in time for their placement.

B. Sleeves: Provide metal sleeves where conduit or control wiring penetrate walls.

1.8 NOTICE OF OBSERVATION OF THE WORK BY ENGINEER

A. When site review and observation by the Engineer is required or requested, Contractor shall provide minimum 24 hours notice prior to the date of such observation.

1.9 NOISE AND VIBRATION

A. Select equipment to operate with minimum noise and vibration. If objectionable noise or vibration is produced or transmitted to or through the building structure by equipment, piping, conduits, or other parts of work, rectify such conditions without cost to Owner.

1.10 OPERATING AND MAINTENANCE INSTRUCTIONS

A. Submit as per Division 1 and sections of Division 26.

B. Operation and maintenance instructions should include all nameplate data, design parameters and exploded view parts sheets. Clearly distinguish between information that pertains to the particular equipment and information which does not.

C. Provide within 90 days after the date of system acceptance.

D. These manuals shall be in accordance with industry-accepted standard and shall include, at a minimum, the followings: (a) Submittal data showing equipment size and selected options for each piece of equipment requiring maintenance. (b) Operation manuals and maintenance manuals for each piece of equipment requiring maintenance, except equipment not furnished as part of the project. Required routine maintenance actions shall be clearly identified. (c) Names and addresses of at least one service agency. (d) Electrical system maintenance and calibration information, including wiring diagrams, schematics, and control sequence descriptions. Desired or field-determined setpoints shall be permanently recorded on control drawings at control devices or, for digital control systems, in programming comments. (e) A complete narrative of how each system is intended to operate, including suggested setpoints. Provide instructions on systems operation to Owner’s representatives.

1.11 OPERATING TESTS

A. After all electrical systems have been completed and put into operation, subject each system to an operating test under design conditions to ensure proper sequence and operation throughout the range of operation. Make adjustments as required to ensure proper functioning of all systems. Special tests on individual systems are specified under individual sections.

1.12 LUBRICATION AND OIL

A. Provide a complete charge of the correct lubricant for each item of equipment requiring lubrication.

1.13 RECORD DTRAWINGS

A. Prepare under provisions of Division 1, as work progresses, record drawings clearly showing the actual location and sizes of all Division 26 equipment, conduit, and equipment installed. Deliver record drawings full size. ALSO PROVIDE RECORD DRAWINGS ELECTRONICALLY IN AUTOCAD, OR REVIT, FORMAT. ELECTRONIC FILES MAY BE AVAILABLE FROM ENGINEER AT A COST OF $25 PER SHEET.

1.14 ACCESS PANELS

A. Access doors or panels for all devices requiring adjustment or maintenance (including but not limited to junction boxes, switches, controls) shall be selected and provided under

Division 26; furnished to ceiling or wall contractor for their installation. Appearance of access doors shall be acceptable to Architect. Doors and panels shall be designed for the fire rating of wall or ceiling in which they are installed. All access panels shall be lockable and shall be keyed alike (same keying as panels from other divisions).

1.15 ASSIST TESTING, OBSERVATIONS AND BALANCING

A. Operate and adjust equipment as required for testing or observation by Engineer, Owners representatives, Building authorities, and Fire officials.

1.16 DEMOLITION

A. Remove conduits/pipe to above ceiling or below floor. Re-support any remaining conduit/pipe that was supported by demolition walls. Damage to existing materials /equipment shall be repaired at no additional cost. Give demolished equipment to Owner, dispose of if Owner does not want. Remove ballasts and lamps in strict compliance with Federal, State and local laws and ordinances.

1.17 WARRANTY

A. Guarantee labor and materials for 1 year unless noted otherwise. Warranties begin upon Owner's acceptance of substantial completion of the installation.

B. Guarantee all drivers for LED light fixtures for a minimum of 5 years.

1.18 RECORD DRAWINGS

A. Within 90 days after the date of system acceptance, provide record drawings in AutoCAD 2010 or higher, or REVIT format, plus full size hard copy. Electronic backgrounds may be available from Engineer for a fee. Record drawings shall include as a minimum the installed location and performance data on each piece of equipment, underground conduit location and routing, equipment wiring diagrams, switchboard and panel layout, and the one line and riser diagrams of distribution system including sizes.

1.19 COORDINATION

A. Provide Mechanical and Plumbing Contractors with electrical requirements of approved equipment in timely manner to insure proper coordination.

B. Obtain and review Mechanical and Plumbing shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions for equipment. Determine connection locations and requirements. Sequence rough-in of electrical connections to coordinate with installation of equipment. Sequence electrical connections to coordinate with start-up of equipment.

C. Order switchboards, panel boards, disconnects, and related electrical appurtenances only after completion of the followings: (1) complete review and coordinated electrical requirements of mechanical and plumbing equipment, and (2) complete overcurrent, protective device coordination, and arc flash studies.

PART 2 PRODUCTS
Not Used.

PART 3 EXECUTION
Not Used.

END OF SECTION

SECTION 26 05 03

EQUIPMENT WIRING CONNECTIONS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes electrical connections to equipment.

B. Related Sections:
1. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables.
2. Section 26 05 33 - Raceway and Boxes for Electrical Systems.

1.2 REFERENCES

A. National Electrical Manufacturers Association:
1. NEMA WD 1 - General Requirements for Wiring Devices.
2. NEMA WD 6 - Wiring Devices-Dimensional Requirements.

1.3 SUBMITTALS

A. Product Data: Submit wiring device manufacturer’s catalog information showing dimensions, configurations, and construction.

B. Manufacturer's installation instructions.

1.4 CLOSEOUT SUBMITTALS

A. Project Record Documents: Record actual locations, sizes, and configurations of equipment connections.

1.5 COORDINATION

A. Obtain and review shop drawings, product data, manufacturer’s wiring diagrams, and manufacturer's instructions for equipment furnished under other sections.

B. Determine connection locations and requirements.

C. Sequence rough-in of electrical connections to coordinate with installation of equipment.

D. Sequence electrical connections to coordinate with start-up of equipment.

PART 2 PRODUCTS

2.1 CORD AND PLUGS

A. Attachment Plug Construction: Conform to NEMA WD 1.

B. Configuration: NEMA WD 6; match receptacle configuration at outlet furnished for equipment.

C. Cord Construction: Type SO, SJO 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.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify equipment is ready for electrical connection, for wiring, and to be energized.

3.2 EXISTING WORK

A. Remove exposed abandoned equipment wiring connections, including abandoned connections above accessible ceiling finishes.

B. Disconnect abandoned utilization equipment and remove wiring connections. Remove abandoned components when connected raceway is abandoned and removed. Install blank cover for abandoned boxes and enclosures not removed.

C. Extend existing equipment connections using materials and methods compatible with existing electrical installations, or as specified.

3.3 INSTALLATION

A. Make electrical connections.

B. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations.

C. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.

D. Install receptacle outlet to accommodate connection with attachment plug.

E. Install cord and cap for field-supplied attachment plug.

F. Install suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.

G. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring requirements.

H. Install terminal block jumpers to complete equipment wiring requirements.

I. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.

3.4 ADJUSTING

A. Section 01 70 00 - Execution and Closeout Requirements: Testing, adjusting, and balancing.

B. Cooperate with utilization equipment installers and field service personnel during checkout and starting of equipment to allow testing and balancing and other startup operations. Provide personnel to operate electrical system and checkout wiring connection components and configurations.

END OF SECTION

SECTION 26 05 22

MANUFACTURED WIRING ASSEMBLIES

PART 1 GENERAL

1.1 SUMMARY

A. Section includes prefabricated flexible cables, distribution units, and cable accessories for system of wiring using manufactured wiring assemblies.

B. Related Sections:
1. Section 26 05 33 - Raceway and Boxes for Electrical Systems: Receptacle and wall switch outlets.
2. Section 26 27 26 - Wiring Devices: Convenience receptacles and wall switches.
3. Section 26 51 00 - Interior Lighting: Fixture receptacles and connector assemblies.

1.2 REFERENCES

A. National Fire Protection Association:
1. NFPA 262 - Standard Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-Handling Spaces.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Shop Drawings: Indicate distribution box, switch box, outlet, and cable layout and branch circuit configuration.

C. Product Data: Submit catalog data for each cable type and for each fitting and accessory.

1.4 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Closeout procedures.

B. Project Record Documents: Record actual locations of cable assemblies and branch circuits.

1.5 QUALITY ASSURANCE

A. Provide wiring materials located in plenums with peak optical density not greater than 0.5, average optical density not greater than 0.15, and flame spread not greater than 5 feet when tested in accordance with NFPA 262.

B. Perform Work in accordance with State, City & Municipality standard.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

1.7 FIELD MEASUREMENTS

A. Verify field measurements prior to fabrication.

1.8 COORDINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Furnish luminaire connectors to luminaire manufacturer for factory installation where required.

1.9 EXTRA MATERIALS

A. Section 01 70 00 - Execution and Closeout Requirements: Spare parts and maintenance products.

B. Furnish two of each configuration and length of cable assembly.

PART 2 PRODUCTS

2.1 MANUFACTURED WIRING ASSEMBLIES

A. Manufacturers:
   1. AMP Inc.
   2. Hubbell Wiring Devices.
   3. Siemens Co.
   4. Substitutions: Section 01 60 00 - Product Requirements.

B. Product Description: Factory assembled cable assemblies with appropriate connector on each end, with lengths and circuit configurations as indicated on Drawings.

C. Switching Unit Assemblies: 6 ft long cable assembly with 6 inch pigtail on one end. Furnish cables configured for 3-way and 4-way switches where required. Voltage: 120 and / or 277 volts.

D. Convenience Receptacle Unit Assemblies: 6 ft long cable assembly with 6 inch pigtail on one end. Furnish cables configured to match device type. Voltage: 120 and / or 277 volts.

E. Luminaire Connector Assemblies: 6 ft long cable assembly with 6 inch pigtail on one end. Voltage: 120 and / or 277 volts.

2.2 DISTRIBUTION UNITS

A. Manufacturers:
1. AMP Inc.
2. Hubbell Wiring Devices.
3. Siemens Co.
4. Substitutions: Section 01 60 00 - Product Requirements.

B. Product Description: Boxes suitable for terminating building wiring system raceways and making connections to integral receptacles; circuit configuration as indicated on Drawings.

2.3 ACCESSORIES

A. Furnish manufacturer's standard accessories, including cable extenders, distribution tees, and switching assemblies.

PART 3 EXECUTION

3.1 EXISTING WORK

A. Remove exposed abandoned cable and accessories, including abandoned components above accessible ceiling finishes.

B. Disconnect and remove abandoned cable. Remove abandoned cable when boxes being serviced are abandoned and removed.

C. Maintain access to existing distribution boxes and other installations remaining active and requiring access. Modify installation or provide access panel.

D. Extend existing cable installations using materials and methods compatible with existing electrical installations, or as specified.

E. Clean and repair existing cable and accessories to remain or to be reinstalled.

3.2 INSTALLATION

A. Support cable by means of straps and clamps.

B. Support cable above suspended ceiling to avoid contact with and interference with removal of ceiling panels. Do not support from ceiling suspension system.

C. Arrange cable to avoid interference with access to other Work.

D. Install each cable with 10 percent slack length.

END OF SECTION

SECTION 26 05 26

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Rod electrodes.
2. Active electrodes.
3. Wire.
4. Grounding well components.
5. Mechanical connectors.
6. Exothermic connections.

B. Related Sections:
1. Section 03 20 00 - Concrete Reinforcing: Bonding or welding bars when reinforcing steel is used for electrodes.
2. Section 09 69 00 - Access Flooring: Grounding systems for access flooring.
3. Section 26 41 00 - Facility Lightning Protection: Grounding of lightning protection system.
4. Section 33 79 00 - Site Grounding: Site related grounding components for buildings and facilities.

1.2 REFERENCES

A. Institute of Electrical and Electronics Engineers:
1. IEEE 142 - Recommended Practice for Grounding of Industrial and Commercial Power Systems.
2. IEEE 1100 - Recommended Practice for Powering and Grounding Electronic Equipment.

B. International Electrical Testing Association:
1. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.

C. National Fire Protection Association:
1. NFPA 70 - National Electrical Code.
2. NFPA 99 - Standard for Health Care Facilities.

1.3 SYSTEM DESCRIPTION

A. Grounding systems use the following elements as grounding electrodes:
1. [Existing] Metal underground water pipe.
2. [Existing] Metal building frame.
3. Concrete-encased electrode.

4. [Existing] Metal underground gas piping system.
5. Rod electrode.

1.4 PERFORMANCE REQUIREMENTS

A. Grounding System Resistance: 25 ohms maximum.

B. Contractor shall test existing grounding system and determine existing system resistance. Additional grounding rods shall be provided and installed as needed.

1.5 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit data on grounding electrodes and connections.

C. Test Reports: Indicate overall resistance to ground and resistance of each electrode.

D. Manufacturer's Installation Instructions: Submit for active electrodes.

1.6 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.

B. Project Record Documents: Record actual locations of components and grounding electrodes.

1.7 QUALITY ASSURANCE

A. Provide grounding materials conforming to requirements of NEC, IEEE 142, and UL labeled.

B. Perform Work in accordance with State, City and Municipality standard.

1.8 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.

B. Installer: Company specializing in performing work of this section with minimum 3 years documented experience.

1.9 PRE-INSTALLATION MEETINGS

A. Section 01 30 00 - Administrative Requirements: Pre-installation meeting.

B. Convene minimum one week prior to commencing work of this section.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Accept materials on site in original factory packaging, labeled with manufacturer's identification.

C. Protect from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original packaging.

D. Do not deliver items to project before time of installation. Limit shipment of bulk and multiple-use materials to quantities needed for immediate installation.

1.11 COORDINATION

A. Section 01 30 00 - Administrative Requirements: Requirements for coordination.

B. Complete grounding and bonding of building reinforcing steel prior concrete placement.

PART 2 PRODUCTS

2.1 ROD ELECTRODES

A. Manufacturers:
1. Apache Grounding Inc.
2. Copperweld, Inc.
3. Erico, Inc.
4. O-Z Gedney Co.
5. Thomas & Betts, Electrical
6. Substitutions: Section 01 60 00 - Product Requirements.

B. Product Description:
1. Material: Copper-clad steel.
2. Diameter: 3/4 inch.
3. Length: 10 feet.

C. Connector: Connector for exothermic welded connection.

2.2 ACTIVE ELECTRODES

A. Manufacturers:
1. Apache Grounding Inc.
2. Copperweld, Inc.
3. Erico, Inc.
4. O-Z Gedney Co.

5. Thomas & Betts, Electrical
6. Substitutions: Section 01 60 00 - Product Requirements

B. Product Description:
1. Material: Metallic-salt-filled copper-tube electrode.
2. Shape: [Straight.] [L-shaped.] [As indicated on Drawings.]
3. Length: [8 feet] [10 feet] [12 feet] [20 feet].
4. Connector: Connector for exothermic welded connection.

2.3 WIRE

A. Material: Stranded copper.

B. Foundation Electrodes: 4 AWG.

C. Grounding Electrode Conductor: Copper conductor bare [insulated].

D. Bonding Conductor: Copper conductor bare [insulated].

2.4 MECHANICAL CONNECTORS

A. Manufacturers:
1. Apache Grounding Inc.
2. Copperweld, Inc.
3. Erico, Inc.
4. ILSCO Corporation.
5. O-Z Gedney Co.
6. Thomas & Betts, Electrical
7. Substitutions: Section 01 60 00 - Product Requirements.

B. Description: Bronze connectors, suitable for grounding and bonding applications, in configurations required for particular installation.

2.5 EXOTHERMIC CONNECTIONS

A. Manufacturers:
1. Apache Grounding Inc.
2. Cadweld, Erico, Inc.
3. Copperweld, Inc.
4. ILSCO Corporation.
5. O-Z Gedney Co.
6. Thomas & Betts, Electrical.
7. Substitutions: Section 01 60 00 - Product Requirements.

B. Product Description: Exothermic materials, accessories, and tools for preparing and making permanent field connections between grounding system components.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify final backfill and compaction has been completed before driving rod electrodes.

3.2 PREPARATION

A. Remove paint, rust, mill oils, surface contaminants at connection points.

3.3 EXISTING WORK

A. Modify existing grounding system to maintain continuity to accommodate renovations.

B. Extend existing grounding system using materials and methods compatible with existing electrical installations, or as specified.

C. Test existing grounding system for system resistance and expand on system as needed.

3.4 INSTALLATION

A. Install in accordance with IEEE 1100.

B. Grounding system is existing to remain. Contractor shall test existing grounding system resistance. Install additional rod electrodes to achieve specified resistance to ground.

C. Install grounding and bonding conductors concealed from view.

D. Install grounding well pipe with cover at each rod location, rod locations as indicated on Drawings. Install well pipe top flush with finished grade.

E. Install grounding electrode conductor and connect to reinforcing steel in foundation footing as indicated on Drawings. Electrically bond steel together.

F. Permanently attach equipment and grounding conductors prior to energizing equipment.

3.5 FIELD QUALITY CONTROL

A. Section 01 40 00 - Quality Requirements, 01 70 00 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.

B. Inspect and test in accordance with NETA Acceptance Testing Specifications, except Section 4.

C. Grounding and Bonding: Perform inspections and tests listed in NETA Acceptance Testing Specifications, Section 7.13.

D. Perform ground resistance testing in accordance with IEEE 142.

E. Perform leakage current tests in accordance with NFPA 99.

F. Perform continuity testing in accordance with IEEE 142.

G. When improper grounding is found on receptacles, check receptacles in entire project and correct. Perform retest.

END OF SECTION

SECTION 26 56 00

EXTERIOR LIGHTING

PART 1 GENERAL

1.1 SUMMARY

A. Section includes exterior luminaries, poles, and accessories.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

1.3 REFERENCES

A. American National Standards Institute:
   1. ANSI C82.1 - American National Standard for Lamp Ballast-Line Frequency Fluorescent Lamp Ballast.
   2. ANSI C82.4 - American National Standard for Ballasts-for High-Intensity-Discharge and Low-Pressure Sodium Lamps (Multiple-Supply Type).
   3. ANSI O5.1 - Wood Poles, Specifications and Dimensions.

1.4 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Shop Drawings: Indicate dimensions and components for each luminaire not standard Product of manufacturer.

C. Product Data: Submit dimensions, ratings, and performance data.

D. Samples: Submit two color chips 3 x 3 inch in size illustrating luminaire finish color where indicated in luminaire schedule.

1.5 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.

B. Store and handle solid wood poles in accordance with ANSI O5.1.

1.7 COORDINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Furnish bolt templates and pole mounting accessories to installer of pole foundations.

1.8 MAINTENANCE MATERIALS

A. Section 01 70 00 - Execution and Closeout Requirements: Spare parts and maintenance products.

B. Furnish two of each lamp installed.

C. Furnish two gallons of touch-up paint for each different painted finish and color.

D. Furnish two ballasts of each lamp type installed.

PART 2 PRODUCTS

2.1 LUMINARIES

A. Product Description: Complete exterior luminaire assemblies, with features, options, and accessories as scheduled.

B. Refer to Section 01 60 00 - Product Requirements for product options. Substitutions are not permitted.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and Project conditions.

B. Verify foundations are ready to receive fixtures.

3.2 EXISTING WORK

A. Disconnect and remove abandoned exterior luminaries.

B. Extend existing exterior luminaire installations using materials and methods [compatible with existing installations, or] as specified.

C. Clean and repair existing exterior luminaries to remain or to be reinstalled.

3.3 INSTALLATION

A. Install lamps in each luminaire.

B. Bond and ground luminaries, metal accessories and metal poles in accordance with Section 26 05 26.

3.4 FIELD QUALITY CONTROL

A. Section 01 40 00 - Quality Requirements, 01 70 00 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.

B. Operate each luminaire after installation and connection. Inspect for improper connections and operation.

C. Measure illumination levels to verify conformance with performance requirements.

D. Take measurements during night sky, without moon or with heavy overcast clouds effectively obscuring moon.

3.5 ADJUSTING

A. Section 01 70 00 - Execution and Closeout Requirements: Testing, adjusting, and balancing.

B. Aim and adjust luminaries to provide illumination levels and distribution as indicated on Drawings.

3.6 CLEANING

A. Section 01 70 00 - Execution and Closeout Requirements: Final cleaning.

B. Clean photometric control surfaces as recommended by manufacturer.

C. Clean finishes and touch up damage.

3.7 PROTECTION OF FINISHED WORK

A. Section 01 70 00 - Execution and Closeout Requirements: Protecting finished work.

B. Relamp luminaries [having failed lamps] at Substantial Completion.

END OF SECTION

SECTION 31 10 00

SITE CLEARING AND GRUBBING

PART 1 GENERAL

1.1 DEFINITIONS

A. Trees
The line of demarcation between brush and trees, for the purpose of distinguishing clearing requirements, is that trees, as used, will be considered as that woody growth not falling within the limits of brush as defined below.

B. Brush
Brush is that growth which is less than 2 inches in diameter measured6 inches from the ground on the uphill side and is less than 6 feet in height measured from the ground on the uphill side.

C. Structures
The term "structures" includes buildings or portions thereof, walls, silos, storm or root cellars, cisterns, wells, windmills, pit silos, water towers, etc. Structures shall be removed or filled to the ground surface.

1.2 PROJECT/SITE CONDITIONS

A. Existing Conditions
1. Boundaries
The area to be cleared under this contract is shown by the general limits as defined on the plans, which form a part of this contract.

2. Existing Conditions are as Shown on the Demolition and Site Plan Sheets.

3. Trees shall not be removed unless specifically noted to be removed.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.1 CLEARING REQUIREMENTS

A. Brush
The cutting of brush is not required.

B. Equipment
A tree crushing machine may be used at the option of the Contractor in all clearing operations.

3.2 DISPOSAL OF MATERIAL

A. General
The material cleared from the areas shall be completely removed by transporting from the property unless otherwise approved by the Engineer.

B. Burning
   a. No burning is allowed.

C. Burial
   No burial of material is allowed.

D. Removal from Site
   Except as otherwise provided, the Contractor will be permitted to remove felled and trimmed timber from the site of the work. The owner will assume no responsibility for the protection and safekeeping of such material. All stockpiled timber must be removed from the site before final acceptance of the work will be made.

3.3 DEBRIS

All debris shall be removed from the site and disposed of in accordance with all applicable laws and regulations.

3.4 MARKETABLE MATERIALS

Any of the cleared materials which the Contractor considers marketable shall become its property and shall be removed from the area.

3.5 LOCATIONS

The locations of structures and debris to be cleared are shown on the plans.

END OF SECTION

SECTION 31 23 00

EXCAVATION AND FILL

PART 1 GENERAL

1.1 RELATED DOCUMENTS

The Conditions of the Contract, including the Uniform General and Supplementary General Conditions, Owner's Special Conditions, and Division 1 – General Requirements, apply to work specified in this Section.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN WATER WORKS ASSOCIATION (AWWA)

AWWA C600	(2005) Installation of Ductile-Iron Water Mains and Their Appurtenances

AMERICAN WELDING SOCIETY (AWS)

AWS D1.1/D1.1M	(2006; Errata 2006) Structural Welding Code - Steel

AMERICAN WOOD-PRESERVERS' ASSOCIATION (AWPA)

ASTM INTERNATIONAL (ASTM)

ASTM C 136	(2006) Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM C 33	(2007) Standard Specification for Concrete Aggregates
ASTM D 1140	(2000; R 2006) Amount of Material in Soils Finer than the No. 200 (75-micrometer) Sieve
ASTM D 1556	(2007) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	(2007) Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3) (2700 kN-m/m3)
ASTM D 1883	(2007) CBR (California Bearing Ratio) of Laboratory-Compacted Soils
ASTM D 2216	(2005) Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
ASTM D 2321	(2005) Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
ASTM D 2434	(1968; R 2006) Permeability of Granular Soils (Constant Head)

ASTM D 2487	(2006) Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 5195	(2005) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017	(2005) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
ASTM D 3786	(2006e1) Hydraulic Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method
ASTM D 422	(1963; R 2007) Particle-Size Analysis of Soils
ASTM D 4318	(2005) Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D 4355	(2007) Deterioration of Geotextiles from Exposure to Light, Moisture and Heat in a Xenon-Arc Type Apparatus
ASTM D 4491	(1999a; R 2004e1) Water Permeability of Geotextiles by Permittivity
ASTM D 4533	(2004) Trapezoid Tearing Strength of Geotextiles
ASTM D 4632	(1991; R 2003) Grab Breaking Load and Elongation of Geotextiles
ASTM D 4751	(2004) Determining Apparent Opening Size of a Geotextile
ASTM D 4759	(2002; R 2007) Determining the Specification Conformance of Geosynthetics
ASTM D 4833	(2007) Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products
ASTM D 698	(2007e1) Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/cu. ft. (600 kN-m/cu. m.))
U.S. ARMY CORPS OF ENGINEERS (USACE)	
EM 385-1-1	(2003) Safety -- Safety and Health Requirements
U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)	
EPA 530/F-93/004	(1993; Rev O; Updates I, II, IIA, IIB, and III) Test Methods for Evaluating Solid Waste (Vol IA, IB, IC, and II) (SW-846)
EPA 600/4-79/020	(1983) Methods for Chemical Analysis of Water and Wastes
U.S. GENERAL SERVICES ADMINISTRATION (GSA)	
CID A-A-1909	(Basic Notice 1; Canc. Notice 2) Fertilizer
FS A-A-203	(Rev C; Notice 2) Paper, Kraft, Untreated

1.3 DEFINITIONS

1.3.1 Capillary Water Barrier

A layer of clean, poorly graded crushed rock, stone, or natural sand or gravel having a high porosity which is placed beneath a building slab with or without a vapor barrier to cut off the capillary flow of pore water to the area immediately below a slab.

1.3.2 Degree of Compaction

Degree of compaction is expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 698, for general soil types, abbreviated as percent laboratory maximum density.

1.3.3 Hard Materials

Weathered rock, dense consolidated deposits, or conglomerate materials which are not included in the definition of "rock" but which usually require the use of heavy excavation equipment, ripper teeth, or jack hammers for removal.

1.3.4 Rock

Solid homogeneous interlocking crystalline material with firmly cemented, laminated, or foliated masses or conglomerate deposits, neither of which can be removed without systematic drilling and blasting, drilling and the use of expansion jacks or feather wedges, or the use of backhoe-mounted pneumatic hole punchers or rock breakers; also, large boulders, buried masonry, or concrete other than pavement exceeding ½ cubic yard in volume. Removal of hard material will not be considered rock excavation because of intermittent drilling and blasting that is performed merely to increase production.

1.4 SUBMITTALS

The following shall be submitted in accordance with Section 013300 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Shoring and Sheeting Plan
Dewatering work plan, if required
Submit 15 days prior to starting work.

SD-06 Test Reports

Borrow Site Testing;
Fill and backfill test
Select material test
Density tests
Moisture Content Tests
Copies of all laboratory and field test reports within 48 hours of the completion of the test.

1.5 DELIVERY, STORAGE, AND HANDLING

Perform in a manner to prevent contamination or segregation of materials.

1.6 REQUIREMENTS FOR OFF SITE SOIL

Soils brought in from off site for use as backfill shall be tested for TPH, BTEX and full TCLP including ignitability, corrosivity and reactivity. Backfill shall contain less than 100 parts per million (ppm) of total petroleum hydrocarbons (TPH) and less than 10 ppm of the sum of Benzene, Toluene, Ethyl Benzene, and Xylene (BTEX) and shall not fail the TCPL test. TPH concentrations shall be determined by using EPA 600/4-79/020 Method 418.1. BTEX concentrations shall be determined by using EPA 530/F-93/004 Method 5030/8020. TCLP

shall be performed in accordance with EPA 530/F-93/004 Method 1311. Provide Borrow Site Testing for TPH, BTEX and TCLP from a composite sample of material from the borrow site, with at least one test from each borrow site. Material shall not be brought on site until tests have been approved by the Engineer.

1.7 QUALITY ASSURANCE

1.7.1 Shoring and Sheeting Plan

Submit drawings and calculations, certified by a registered professional engineer, describing the methods for shoring and sheeting of excavations. Drawings shall include material sizes and types, arrangement of members, and the sequence and method of installation and removal. Calculations shall include data and references used.

1.7.2 Dewatering Work Plan

Submit procedures for accomplishing dewatering work if required.

1.7.3 Utilities

Movement of construction machinery and equipment over pipes and utilities during construction shall be at the Contractor's risk. Excavation made with power-driven equipment is not permitted within two feet of known utility or subsurface construction. For work immediately adjacent to or for excavations exposing a utility or other buried obstruction, excavate by hand. Start hand excavation on each side of the indicated obstruction and continue until the obstruction is uncovered or until clearance for the new grade is assured. Support uncovered lines or other existing work affected by the contract excavation until approval for backfill is granted by the Engineer. Report damage to utility lines or subsurface construction immediately to the Engineer.

PART 2 PRODUCTS

2.1 SOIL MATERIALS

2.1.1 Satisfactory Materials

Any materials classified by ASTM D 2487 as GW, GP, GM, GP-GM, GW-GM, GC, GP-GC, GM-GC, SW, SP, or others as detailed in the project geotechnical report, free of debris, roots, wood, scrap material, vegetation, refuse, soft unsound particles, and frozen, deleterious, or objection-able materials. Unless specified otherwise, the maximum particle diameter shall be one-half the lift thickness at the intended location.

2.1.2 Unsatisfactory Materials

Materials which do not comply with the requirements for satisfactory materials. Unsatisfactory materials also include man-made fills, trash, refuse, or backfills from previous construction. Unsatisfactory material also includes material classified as satisfactory which contains root and other organic matter, frozen material, and stones larger than 3 inches. The Engineer shall be notified of any contaminated materials.

2.1.3 Cohesionless and Cohesive Materials

Cohesionless materials include materials classified in ASTM D 2487 as GW, GP, SW, and SP. Cohesive materials include materials classified as GC, SC, ML, CL, MH, and CH. Materials classified as GM, GP-GM, GW-GM, SW-SM, SP-SM, and SM shall be identified as cohesionless only when the fines are nonplastic (plasticity index equals zero). Materials classified as GM and SM will be identified as cohesive only when the fines have a plasticity index greater than zero.

2.1.4 Expansive Soils

Soils that have a plasticity index equal to or greater than 20 when tested in accordance with ASTM D 4318.

2.1.5 Common Fill
Approved, unclassified soil material with the characteristics required to compact to the soil density specified for the intended location.

2.1.5 Backfill and Fill Material
ASTM D 2487, classification GW, GP, GM, GC, SW, SP, SM, SC with a maximum ASTM D 4318 liquid limit of 35, maximum ASTM D 4318 plasticity index of 12, and a maximum of 25 percent by weight passing ASTM D 1140, No. 200 sieve.

2.1.7 Select Material
Provide materials classified as GW, GP, SW, SP, or by ASTM D 2487 where indicated. The liquid limit of such material shall not exceed 35 percent when tested in accordance with ASTM D 4318. The plasticity index shall not be greater than 12 percent when tested in accordance with ASTM D 4318, and not more than 35 percent by weight shall be finer than No. 200 sieve when tested in accordance with ASTM D 1140. The combined material shall conform to the following sieve analysis:

Sieve Size	Percent Passing by Weight
2 1/2 inches	100
No. 4	40 - 85
No. 10	20 - 80
No. 40	10 - 60
No. 200	5 - 25

2.1.8 Topsoil
Natural, friable soil representative of productive, well-drained soils in the area, free of subsoil, stumps, rocks larger than one-inch diameter, brush, weeds, toxic substances, and other material detrimental to plant growth. Amend topsoil pH range to obtain a pH of 5.5 to 7. This requirement applies to topsoil in areas not covered by Landscape Plans

2.2 POROUS FILL FOR CAPILLARY WATER BARRIER
ASTM C 33 fine aggregate grading with a maximum of 3 percent by weight passing ASTM D 1140, No. 200 sieve, or coarse aggregate Size 57, 67, or 77 and conforming to the general soil material requirements specified in paragraph entitled "Satisfactory Materials."

2.3 UTILITY BEDDING MATERIAL
Except as specified otherwise in the individual piping section or on the plans, provide bedding for buried piping in accordance with AWWA C600, Type 4, except as specified herein. Backfill to top of pipe shall be compacted to 95 percent of ASTM D 698 maximum density. Plastic piping shall have bedding to spring line of pipe. Provide ASTM D 2321 materials as follows:

A. Class I: Angular, 0.25 to 1.5 inches, graded crushed stone.
B. Class II: Coarse sands and gravels with maximum particle size of 1.5 inches, including various graded sands and gravels containing small percentages of fines, generally granular and noncohesive, either wet or dry. Soil Types GW, GP, SW, and SP are included in this class as specified in ASTM D 2487.

This section applies to utilities for which a governing authority (City of Boerne, PEC) has not established a specification.

2.4 BORROW
Obtain borrow materials required in excess of those furnished from excavations from sources outside of property.

2.4 BACKFILL FOR UNDERDRAINAGE SYSTEMS

Clean crushed rock, or gravel meeting the following requirements:

A. Perforated or Slotted-Wall Pipe: Backfill meeting requirements of Type I material as specified in Table 1.

B. Open Joint Pipe: Backfill consisting of both Type I and Type II materials as specified in Table 1.

C. Blind or French Drains: Backfill consisting of Type II material as specified in Table 1.

D. Any Type Drain Used with Filter Fabric: Clean gravel or crushed stone or gravel conforming to Type I or Type II material as specified in Table 1.

TABLE 1

	Type I Gradation E 11 ASTM C 33	Type II Gradation 57 ASTM C 33
ASTM D 422 Sieve Size	Percent Passing	Percent Passing
1.5 inches	--	100
1 inch	--	90 - 100
3/8 inch	100	25 - 60
No. 4	95 - 100	5 - 40
No. 8	--	0 - 20
No. 16	45 - 80	--
No. 50	10 - 30	--
No. 100	0 - 10	--

2.7 FILTER FABRIC

Provide a pervious sheet of polyester, nylon, glass or polypropylene, ultraviolet resistant filaments woven, spun bonded, fused, or otherwise manufactured into a nonraveling fabric with uniform thickness and strength. Fabric shall have the following manufacturer certified minimum average roll properties as determined by ASTM D 4759:

		Class A	Class B
A.	Grab tensile strength (ASTM D 4632) machine and transverse direction	min. 180	80 lbs.
B.	Grab elongation (ASTM D 4632) machine and transverse direction	min. 15	15 percent
C.	Puncture resistance (ASTM D 4833)	min. 80	25 lbs.
D.	Mullen burst strength (ASTM D 3786)	min. 290	130 psi.
E.	Trapezoidal Tear (ASTM D 4533)	min. 50	25 lbs.
F.	Apparent Opening Size (ASTM D 4751)	See Criteria Below	

(1) Soil with 50 percent or less particles by weight passing US No. 200 Sieve, AOS less than 0.6 mm (greater than #30 US Std. Sieve)

(2) Soil with more than 50 percent particles by weight passing US No. 200 Sieve, AOS less than 0.297 mm (greater than #50 US Std. Sieve)

G. Permeability (ASTM D 4491) k fabric greater than k Soil

H. Ultraviolet Degradation (ASTM D 4355) 70 percent Strength retained at 150 hours

2.8 MATERIAL FOR RIP-RAP

Bedding material, Grout, and rock conforming to TxDOT Item 432 for construction indicated.

2.8.1 Bedding Material

Consisting of sand, gravel, or crushed rock, well graded with a maximum particle size of 2 inches. Material shall be composed of tough, durable particles. Fines passing the No. 200 standard sieve shall have a plasticity index less than six.

2.8.2 Grout

Composed of cement, water, an air-entraining admixture, and sand mixed in proportions of one-part Portland cement to two parts of sand, sufficient water to produce a workable mixture, and an amount of admixture which will entrain sufficient air to produce durable grout, as determined by the Contracting Officer. Mix grout in a concrete mixer. Mixing time shall be sufficient to produce a mixture having a consistency permitting gravity flow into the interstices of the rip-rap with limited spading and brooming.

2.8.3 Rock

Rock fragments sufficiently durable to ensure permanence in the structure and the environment in which it is to be used. Rock fragments shall be free from cracks, seams, and other defects that would increase the risk of deterioration from natural causes. The size of the fragments shall be such that no individual fragment exceeds a weight of 150 pounds and that no more than 10 percent of the mixture, by weight, consists of fragments weighing 2 pounds or less each. Specific gravity of the rock shall be a minimum of 2.50. The inclusion of more than trace 1 percent quantities of dirt, sand, clay, and rock fines will not be permitted.

2.9 BURIED WARNING AND IDENTIFICATION TAPE

Polyethylene plastic and metallic core or metallic-faced, acid- and alkali-resistant, polyethylene plastic] warning tape manufactured specifically for warning and identification of buried utility lines. Provide tape on rolls, 3-inch minimum width, color coded as specified below for the intended utility with warning and identification imprinted in bold black letters continuously over the entire tape length. Warning and identification to read, "CAUTION, BURIED (intended service) LINE BELOW" or similar wording. Color and printing shall be permanent, unaffected by moisture or soil.

Warning Tape Color Codes

Yellow:	Electric
Yellow:	Gas, Oil; Dangerous Materials
Orange:	Telephone and Other Communications
Blue:	Water Systems
Green:	Sewer Systems
White:	Steam Systems
Gray:	Compressed Air

2.9.1 Warning Tape for Metallic Piping

Acid and alkali-resistant polyethylene plastic tape conforming to the width, color, and printing requirements specified above. Minimum thickness of tape shall be 0.003 inch. Tape shall have a minimum strength of 1500 psi lengthwise, and 1250 psi crosswise, with a maximum 350 percent elongation.

2.9.2 Detectable Warning Tape for Non-Metallic Piping

Polyethylene plastic tape conforming to the width, color, and printing requirements specified above. Minimum thickness of the tape shall be 0.004 inch. Tape shall have a minimum strength of 1500 psi lengthwise and 1250 psi crosswise. Tape shall be manufactured with integral wires, foil backing, or other means of enabling detection by a metal detector when tape

is buried up to 3 feet deep. Encase metallic element of the tape in a protective jacket or provide with other means of corrosion protection.

2.10 DETECTION WIRE FOR NON-METALLIC PIPING

Detection wire shall be insulated single strand, solid copper with a minimum of 12 AWG.

PART 3 EXECUTION

3.1 PROTECTION

3.1.1 Shoring and Sheeting

Provide shoring, bracing, cribbing, trench boxes, underpinning, and sheeting where required. In addition to other requirements set forth in this contract, include provisions in the shoring and sheeting plan that will accomplish the following:

A. Prevent undermining of pavements, foundations and slabs.
B. Prevent slippage or movement in banks or slopes adjacent to the excavation.
C. Allow for the abandonment of shoring and sheeting materials in place in critical areas as the work is completed. In these areas, backfill the excavation to within 3 feet of the finished grade and remove the remaining exposed portion of the shoring before completing the backfill.

3.1.2 Drainage and Dewatering

Provide for the collection and disposal of surface and subsurface water encountered during construction.

3.1.2.1 Drainage

So that construction operations progress successfully, completely drains construction site during periods of construction to keep soil materials sufficiently dry. The Contractor shall establish/construct storm drainage features (ponds/basins) at the earliest stages of site development, and throughout construction grade the construction area to provide positive surface water runoff away from the construction activity and/or provide temporary ditches, dikes, swales, and other drainage features and equipment as required to maintain dry soils, prevent erosion and undermining of foundations. When unsuitable working platforms for equipment operation and unsuitable soil support for subsequent construction features develop, remove unsuitable material and provide new soil material as specified herein. It is the responsibility of the Contractor to assess the soil and ground water conditions presented by the plans and specifications and to employ necessary measures to permit construction to proceed. Excavated slopes and backfill surfaces shall be protected to prevent erosion and sloughing. Excavation shall be performed so that the site, the area immediately surrounding the site, and the area affecting operations at the site shall be continually and effectively drained.

3.1.2.2 Dewatering

Groundwater flowing toward or into excavations shall be controlled to prevent sloughing of excavation slopes and walls, boils, uplift and heave in the excavation and to eliminate interference with orderly progress of construction. French drains, sumps, ditches or trenches will not be permitted within 3 feet of the foundation of any structure, except with specific written approval, and after specific contractual provisions for restoration of the foundation area have been made. Control measures shall be taken by the time the excavation reaches the water level in order to maintain the integrity of the in-situ material.

3.1.3 Underground Utilities

Location of the existing utilities indicated is approximate. The Contractor shall physically verify the location and elevation of the existing utilities indicated prior to starting construction. The Contractor shall contact One Call, City of Boerne and the District Facilities Office for assistance in locating existing utilities.

3.1.4 Machinery and Equipment

Movement of construction machinery and equipment over pipes during construction shall be at the Contractor's risk. Repair, or remove and provide new pipe for existing or newly installed pipe that has been displaced or damaged.

3.2 SURFACE PREPARATION

3.2.1 Clearing and Grubbing

Unless indicated otherwise, remove trees, stumps, logs, shrubs, brush and vegetation and other items that would interfere with construction operations within the 5 feet outside of each building and structure line. Remove stumps entirely. Grub out matted roots and roots over 2 inches in diameter to at least 18 inches below existing surface.

3.2.2 Stripping

Strip suitable soil from the site where excavation or grading is indicated and stockpile separately from other excavated material. Material unsuitable for use as topsoil shall be stockpiled and used for backfilling. Locate topsoil so that the material can be used readily for the finished grading. Where sufficient existing topsoil conforming to the material requirements is not available on site, provide borrow materials suitable for use as topsoil. Protect topsoil and keep in segregated piles until needed.

3.2.3 Unsuitable Material

Remove vegetation, debris, decayed vegetable matter, sod, mulch, and rubbish underneath paved areas or concrete slabs.

3.3 EXCAVATION

Excavate to contours, elevation, and dimensions indicated. Reuse excavated materials that meet the specified requirements for the material type required at the intended location. Keep excavations free from water. Excavate soil disturbed or weakened by Contractor's operations, soils softened or made unsuitable for subsequent construction due to exposure to weather. Excavations below indicated depths will not be permitted except to remove unsatisfactory material. Unsatisfactory material encountered below the grades shown shall be removed as directed. Refill with select material and compact to 95 percent of ASTM D 698 maximum density. Unless specified otherwise, refill excavations cut below indicated depth with select material and compact to 95 percent of ASTM D 698 maximum density. Satisfactory material removed below the depths indicated, without specific direction of the Engineer, shall be replaced with satisfactory materials to the indicated excavation grade; except as specified for spread footings. Determination of elevations and measurements of approved over depth excavation of unsatisfactory material below grades indicated shall be done under the direction of the Engineer.

3.3.1 Structures with Spread Footings

Ensure that footing subgrades have been inspected and approved by the Engineer prior to concrete placement. Fill over excavations with concrete during foundation placement.

3.3.2 Pile Cap Excavation and Backfilling

Excavate to bottom of pile cap prior to placing or driving piles, unless authorized otherwise by the Engineer. Backfill and compact over excavations and changes in grade due to pile driving ope-rations to 95 percent of ASTM D 698 maximum density. Refer to Structural Plans for additional requirements.

3.3.3 Pipe Trenches

Excavate to the dimension indicated. Grade bottom of trenches to provide uniform support for each section of pipe after pipe bedding placement. Tamp if necessary to provide a firm pipe bed. Recesses shall be excavated to accommodate bells and joints so that pipe will be uniformly supported for the entire length. Rock, where encountered, shall be excavated to a depth of at least 6 inches below the bottom of the pipe.

3.3.4 Hard Material and Rock Excavation

Remove hard material and rock to elevations indicated in a manner that will leave foundation material in an unshattered and solid condition. Roughen level surfaces and cut sloped surfaces into benches for bond with concrete. Protect shale from conditions causing decomposition along joints or cleavage planes and other types of erosion. Removal of hard material and rock beyond lines and grades indicated will not be grounds for a claim for additional payment unless previously authorized by the Engineer. Excavation of the material claimed as rock shall not be performed until the material has been cross sectioned by the Contractor and approved by the Engineer. Common excavation shall consist of all excavation not classified as rock excavation.

3.3.5 Excavated Materials

Satisfactory excavated material required for fill or backfill shall be placed in the proper section of the permanent work required or shall be separately stockpiled if it cannot be readily placed. Satisfactory material in excess of that required for the permanent work and all unsatisfactory material shall be disposed of as specified in Paragraph "DISPOSITION OF SURPLUS MATERIAL."

3.3.6 Final Grade of Surfaces to Support Concrete

Excavation to final grade shall not be made until just before concrete is to be placed. For pile foundations, the excavation shall be stopped at an elevation 6 to 12 inches above the bottom of the footing before driving piles. After pile driving has been completed, the remainder of the excavation shall be completed to the elevations shown. Only excavation methods that will leave the foundation rock in a solid and unshattered condition shall be used. Approximately level surfaces shall be roughened, and sloped surfaces shall be cut as indicated into rough steps or benches to provide a satisfactory bond. Shales shall be protected from slaking and all surfaces shall be protected from erosion resulting from ponding or flow of water.

3.4 SUBGRADE PREPARATION

Unsatisfactory material in surfaces to receive fill or in excavated areas shall be removed and replaced with satisfactory materials as directed by the Engineer. The surface shall be scarified to a depth of 6 inches before the fill is started. Sloped surfaces steeper than 1 vertical to 4 horizontal shall be plowed, stepped, benched, or broken up so that the fill material will bond with the existing material. When subgrades are less than the specified density, the ground surface shall be broken up to a minimum depth of 6 inches, pulverized, and compacted to the specified density. When the subgrade is part fill and part excavation or natural ground, the excavated or natural ground portion shall be scarified to a depth of 12 inches and compacted as specified for the adjacent fill. Material shall not be placed on surfaces that are muddy, frozen, or contain frost. Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, or other approved equipment well suited to the soil being compacted. Material shall be moistened or aerated as necessary to plus or minus 3 percent of optimum moisture. Minimum subgrade density shall be as specified herein.

3.4.1 Proof Rolling

Proof rolling shall be done on an exposed subgrade free of surface water (wet conditions resulting from rainfall) which would promote degradation of an otherwise acceptable subgrade. After stripping, proof roll the existing subgrade with six passes of a 15 ton, pneumatic-tired roller. Operate the roller in a systematic manner to ensure the number of passes over all areas, and at speeds between 2 1/2 to 3 1/2 miles per hour. Notify the Engineer a minimum of 3 days prior to proof rolling. Proof rolling shall be performed in the presence of the Engineer. Rutting or pumping of material shall be undercut as directed by the Engineer and replaced with select material.

3.5 SUBGRADE FILTER FABRIC

NOT USED

3.6 FILLING AND BACKFILLING

Fill and backfill to contours, elevations, and dimensions indicated. Compact each lift before placing overlaying lift.

3.6.1 Common Fill Placement

Provide for general site. Place in 8-inch lifts. Compact areas not accessible to rollers or compact-tors with mechanical hand tampers. Aerate material excessively moistened by rain to a satisfactory moisture content. Finish to a smooth surface by blading, rolling with a smooth roller, or both.

3.6.2 Backfill and Fill Material Placement

Provide for paved areas and under concrete slabs, except where select material is provided. Place in 8-inch lifts. Do not place over wet or frozen areas. Place backfill material adjacent to structures as the structural elements are completed and accepted. Backfill against concrete only when approved. Place and compact material to avoid loading upon or against the structure.

3.6.3 Select Material Placement

Place in 8-inch lifts. Do not place over wet or frozen areas. Backfill adjacent to structures shall be placed as structural elements are completed and accepted. Backfill against concrete only when approved. Place and compact material to avoid loading upon or against structure.

3.6.4 Backfill and Fill Material Placement Over Pipes and at Walls

Backfilling shall not begin until construction below finish grade has been approved, underground utilities systems have been inspected, tested and approved, forms removed, and the excavation cleaned of trash and debris. Backfill shall be brought to indicated finish grade. Where pipe is coated or wrapped for protection against corrosion, the backfill material up to elevation 2 feet above sewer lines and 1 foot above other utility lines shall be free from stones larger than 1 inch in any dimension. Heavy equipment for spreading and compacting backfill shall not be operated closer to foundation or retaining walls than a distance equal to the height of backfill above the top of footing; the area remaining shall be compacted in layers not more than 4 inches in compacted thickness with power-driven hand tampers suitable for the material being compacted. Backfill shall be placed carefully around pipes or tanks to avoid damage to coatings, wrappings, or tanks. Backfill shall not be placed against foundation walls prior to 7 days after completion of the walls. As far as practicable, backfill shall be brought up evenly on each side of the wall and sloped to drain away from the wall.

3.6.5 Porous Fill Placement

NOT USED

3.6.6 Trench Backfilling

Backfill as rapidly as construction, testing, and acceptance of work permits. Place and compact backfill under structures and paved areas in 8-inch lifts to top of trench and in 8-inch lifts to one foot over pipe outside structures and paved areas.

3.7 BORROW

Where satisfactory materials are not available in sufficient quantity from required excavations, approved borrow materials shall be obtained as specified herein.

3.8 BURIED WARNING AND IDENTIFICATION TAPE

Provide buried utility lines with utility identification tape. Bury tape 12 inches below finished grade; under pavements and slabs, bury tape 6 inches below top of subgrade.

3.9 BURIED DETECTION WIRE

Bury detection wire directly above non-metallic piping at a distance not to exceed 12 inches above the top of pipe. The wire shall extend continuously and unbroken, from manhole to manhole. The ends of the wire shall terminate inside the manholes at each end of the pipe, with a minimum of 3 feet of wire, coiled, remaining accessible in each manhole. The wire shall remain insulated over its entire length. The wire shall enter manholes between the top of the corbel and the frame, and extend up through the chimney seal between the frame and the chimney seal. For force mains, the wire shall terminate in the valve pit at the pump station end of the pipe.

3.10 COMPACTION

Determine in-place density of existing subgrade; if required density exists, no compaction of existing subgrade will be required.

3.10.1 General Site

Compact underneath areas designated for vegetation and areas outside the 5-foot line of the paved area or structure to 90 percent of ASTM D 698.

3.10.2 Structures, Spread Footings, and Concrete Slabs

Compact top 6 inches of subgrades to 95 percent of ASTM D 698. Compact select material to 95 percent of ASTM D 698. Refer to Structural Plans for additional requirements.

3.10.3 Adjacent Area

Compact areas within 5 feet of structures to 90 percent of ASTM D 698.

3.10.4 Paved Areas

Compact top 6 inches of subgrades to 95 percent of ASTM D 698. Compact fill and backfill materials to 95 percent of ASTM D 698.

3.11 SPECIAL EARTHWORK REQUIREMENTS FOR SUBSURFACE DRAINS

Excavate to dimensions indicated. Provide a bedding surface of no more than three inches of gravel and place on compacted native soil as indicated. Backfill around and over the pipes after pipe installation has been approved. Place special granular filter material in 6-inch lifts and compact with mechanical, vibrating plate tampers or rammers until no further consolidation can be achieved. Compact backfill overlying the special granular filter material as specified for adjacent or overlying work.

3.11.1 Granular Backfill Using Filter Fabric

3.11.1.1 Perforated or Slotted Wall Pipes

Wrap one layer of filter fabric around pipe in such a manner that longitudinal overlaps are in unperforated or unslotted quadrants of the pipe. Overlap fabric a minimum of 2 inches. Secure fabric to pipe so that backfill material does not infiltrate through overlaps. Place granular material and extend it for one pipe diameter, minimum of 6 inches on each side of and 18 inches above top of pipe. Place a layer of filter fabric on top of granular filter before continuing with backfill.

3.12 RIP-RAP CONSTRUCTION

Construct rip-rap on bedding material with grout in accordance with TxDOT Item 432 in the areas indicated.

3.12.1 Preparation

Trim and dress indicated areas to conform to cross sections, lines and grades shown within a tolerance of 0.1 foot.

3.12.2 Bedding Placement

Spread bedding material uniformly to a thickness of at least 3 inches on prepared subgrade as indicated. Compaction of bedding is not required. Finish bedding to present even surface free from mounds and windrows.

3.12.3 Stone Placement

Place rock for rip-rap on prepared bedding material to produce a well graded mass with the minimum practicable percentage of voids in conformance with lines and grades indicated. Distribute larger rock fragments, with dimensions extending the full depth of the rip-rap throughout the entire mass and eliminate "pockets" of small rock fragments. Rearrange individual pieces by mechanical equipment or by hand as necessary to obtain the distribution of fragment sizes specified above. For grouted rip-rap, hand-place surface rock with open joints to facilitate grouting and do not fill smaller spaces between surface rock with finer material. Provide at least one "weep hole" through grouted rip-rap for every 50 square feet of finished surface. Weep holes shall consist of columns of bedding material, 4 inches in diameter, extending up to the rip-rap surface without grout.

3.12.4 Grouting

Prior to grouting, wet rip-rap surfaces. Grout rip-rap in successive longitudinal strips, approximately 10 feet in width, commencing at the lowest strip and working up the slope. Distribute grout to place of final deposit and work into place between stones with brooms, spades, trowels, or vibrating equipment. Take precautions to prevent grout from penetrating bedding layer. Protect and cure surface for a minimum of 7 days.

3.13 FINISH OPERATIONS

3.13.1 Grading

Finish grades as indicated within one-tenth of one foot. Grade areas to drain water away from structures. Maintain areas free of trash and debris. For existing grades that will remain but which were disturbed by Contractor's operations, grade as directed.

3.13.2 Topsoil and Seed

Scarify existing subgrade. Provide 4 inches of topsoil for newly graded finish earth surfaces and areas disturbed by the Contractor. Topsoil shall not be placed when the subgrade is frozen, excessively wet, extremely dry, or in a condition otherwise detrimental to seeding, planting, or proper grading. Additional topsoil will not be required if work is performed in compliance with stripping and stockpiling requirements. If there is insufficient on-site topsoil meeting specified requirements for topsoil, provide topsoil required in excess of that available. Seed shall match existing vegetation. Provide seed at 5 pounds per 1000 square feet. Provide CID A-A-1909, Type I, Class 2, 10-10-10 analysis fertilizer at 25 pounds per 1000 square feet. Provide commercial agricultural limestone of 94-80-14 analysis at 70 pounds per 1000 square feet. Provide mulch and water to establish an acceptable stand of grass.

3.13.3 Protection of Surfaces

Protect newly backfilled, graded, and top soiled areas from traffic, erosion, and settlements that may occur. Repair or reestablish damaged grades, elevations, or slopes.

3.14 DISPOSITION OF SURPLUS MATERIAL

All surplus material shall be disposed off the site in an approved location. No fill may be placed in a flood plain.

3.15 FIELD QUALITY CONTROL

3.15.1 Sampling

Take the number and size of samples required to perform the following tests.

3.15.2 Testing

Perform one of each of the following tests for each material used. Provide additional tests for each source change.

3.15.2.1 Fill and Backfill Material Testing

Test fill and backfill material in accordance with ASTM C 136 for conformance to ASTM D 2487 gradation limits; ASTM D 1140 for material finer than the No. 200 sieve; ASTM D 4318 for liquid limit and for plastic limit; ASTM D 698 for moisture density relations, as applicable.

3.15.2.2 Select Material Testing

Test select material in accordance with ASTM C 136 for conformance to ASTM D 2487 gradation limits; ASTM D 1140 for material finer than the No. 200 sieve; ASTM D 698 for moisture density relations, as applicable.

3.15.2.3 Porous Fill Testing

Test porous fill in accordance with ASTM C 136 for conformance to gradation specified in ASTM C 33.

3.15.2.4 Density Tests

Test density in accordance with ASTM D 5195. Test each lift at randomly selected locations every 2000 square feet of existing grade in fills for structures and concrete slabs, and every 2500 square feet for other fill areas and every 2000 square feet of subgrade in cut. Include density test results in daily report.

Bedding and backfill in trenches: One test per 200 linear feet in each lift.

3.15.2.5 Moisture Content Tests

In the stockpile, excavation or borrow areas, a minimum of two tests per day per type of material or source of materials being placed is required during stable weather conditions. During unstable weather, tests shall be made as dictated by local conditions and approved moisture content shall be tested in accordance with ASTM D 2216. Include moisture content test results in daily report.

END OF SECTION

SECTION 31 32 11

EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.1 MEASUREMENT AND PAYMENT

1.1.1 Erosion and Control Measures

No separate measurement will be made. Unless noted otherwise on the bid proposal all erosion and sedimentation control measures shall be subsidiary to other work. This section applier to work not specifically covered by Landscape Plans.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM D 1248	(2005) Standard Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable
ASTM D 1560	(2009a) Resistance to Deformation and Cohesion of Bituminous Mixtures by Means of Hveem Apparatus
ASTM D 1777	(1996; R 2007) Thickness of Textile Materials
ASTM D 2028	(1997; R 2004) Cutback Asphalt (Rapid-Curing Type)
ASTM D 2844	(2007) Resistance R-Value and Expansion Pressure of Compacted Soils
ASTM D 3776/D 3776M	(2009a) Mass Per Unit Area (Weight) of Fabric
ASTM D 3787	(2007) Bursting Strength of Textiles - Constant-Rate-of-Traverse (CRT), Ball Burst Test
ASTM D 3884	(2009) Abrasion Resistance of Textile Fabrics (Rotary Platform, Double-Head Method)
ASTM D 4355	(2007) Deterioration of Geotextiles from Exposure to Light, Moisture and Heat in a Xenon-Arc Type Apparatus
ASTM D 4491	(1999a; R 2009) Water Permeability of Geotextiles by Permittivity
ASTM D 4533	(2004; R 2009) Trapezoid Tearing Strength of Geotextiles
ASTM D 4595	(2009) Tensile Properties of Geotextiles by the Wide-Width Strip Method
ASTM D 4632	(2008) Grab Breaking Load and Elongation of Geotextiles

ASTM D 4751	(2004) Determining Apparent Opening Size of a Geotextile
ASTM D 4833	(2007) Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products
ASTM D 4972	(2001; R 2007) pH of Soils
ASTM D 5034	(2009) Breaking Strength and Elongation of Textile Fabrics (Grab Test)
ASTM D 5035	(2006; R 2008e1) Breaking Force and Elongation of Textile Fabrics (Strip Method)
ASTM D 5268	(2007) Topsoil Used for Landscaping Purposes
ASTM D 5852	(2000; R 2007) Standard Test Method for Erodibility Determination of Soil in the Field or in the Laboratory by the Jet Index Method
ASTM D 648	(2007) Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position
ASTM D 6629	(2001; R 2007) Selection of Methods for Estimating Soil Loss by Erosion
ASTM D 698	(2007e1) Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/cu. ft. (600 kN-m/cu. m.))
ASTM D 977	(2005) Emulsified Asphalt

U.S. DEPARTMENT OF AGRICULTURE (USDA)

AMS Seed Act	(1940; R 1988; R 1998) Federal Seed Act

U.S. GREEN BUILDING COUNCIL (USGBC)

LEED	(2002; R 2005) Leadership in Energy and Environmental Design(tm) Green Building Rating System for New Construction (LEED-NC)

1.3 DESCRIPTION OF WORK

The work consists of furnishing and installing temporary and permanent soil surface erosion control materials to prevent the pollution of air, water, and land, including fine grading, blanketing, stapling, mulching, vegetative measures, structural measures, and miscellaneous related work, within project limits and in areas outside the project limits where the soil surface is disturbed from work under this contract at the designated locations. This work includes all necessary materials, labor, supervision and equipment for installation of a complete system. Coordinate this section with the requirements of Section 01 57 23 Temporary Stormwater, Section 31 10 00 Site Clearing and Grubbing and Section 31 23 00 Excavation and Fill.

1.4 SUBMITTALS

Submittals are for Designer of Record (DOR) review. Submit the following in accordance with QCM SUBMITTAL PROCEDURES

SD-01 Preconstruction Submittals

Work sequence schedule
Erosion control plan
Maintenance Record
Record of maintenance work performed, of measurements and findings for product failure, recommendations for repair, and products replaced.

SD-03 Product Data

Manufacturer's literature including physical characteristics, application and installation instructions.

SD-04 Samples

Materials – Not Required

SD-06 Test Reports

Geosynthetic Binders
Hydraulic Mulch
Geotextile Fabrics
Erosion Control Blankets
Synthetic Grid Systems
Articulating Cellular Concrete Block Systems
Certified reports of inspections and laboratory tests, prepared by an independent testing agency, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used and compliance with recognized test standards shall be described.
Sand
Gravel
Sieve test results. Sand shall be uniformly graded.

SD-07 Certificates

Fill Material
Mulch
Hydraulic Mulch
Geotextile Fabrics

Prior to delivery of materials, certificates of compliance attesting that materials meet the specified requirements. Certified copies of the material certificates shall include the following.

Seed

Classification, botanical name, common name, percent pure live seed, minimum percent germination and hard seed, maximum percent weed seed content, and date tested.

Asphalt Adhesive
Tackifier

Composition.

Wood By-Products

Composition, source, and particle size. Products shall be free from toxic chemicals or hazardous material.

Wood Cellulose Fiber

Certification stating that wood components were obtained from managed forests.

SD-10 Operation and Maintenance Data

Maintenance Instructions

Instruction for year-round care of installed material. The Contractor shall include manufacturer supplied spare parts.

SD-11 Closeout Submittals – Not Required

1.5 QUALITY ASSURANCE

1.5.1 Installer's Qualification

The installer shall be certified by the manufacturer for training and experience installing the material.

1.6 DELIVERY, INSPECTION, STORAGE, AND HANDLING

Store materials in designated areas and as recommended by the manufacturer protected from the elements, direct exposure, and damage. Do not drop containers from trucks. Material shall be free of defects that would void required performance or warranty. Deliver geosynthetic binders and synthetic soil binders in the manufacturer's original sealed containers and stored in a secure area.

a. Furnish erosion control blankets and geotextile fabric in rolls with suitable wrapping to protect against moisture and extended ultraviolet exposure prior to placement. Label erosion control blanket and geotextile fabric rolls to provide identification sufficient for inventory and quality control purposes.

b. All synthetic grids, synthetic sheets, and articulating cellular concrete block grids shall be sound and free of defects that would interfere with the proper placing of the block or impair the strength or permanence of the construction. Minor cracks in synthetic grids and concrete cellular block, incidental to the usual methods of manufacture, or resulting from standard methods of handling in shipment and delivery, will not be deemed grounds for rejection.

c. Inspect seed upon arrival at the jobsite for conformity to species and quality. Seed that is wet, moldy, or bears a test date five months or older, shall be rejected.

1.7 SCHEDULING

Submit a construction work sequence schedule, with the approved erosion control plan a minimum of 30 days prior to start of construction. The work schedule shall coordinate the timing of land disturbing activities with the provision of erosion control measures to reduce on-site erosion and off-site sedimentation. Coordinate installation of temporary erosion control features with the construction of permanent erosion control features to assure effective and continuous control of erosion, pollution, and sediment deposition. Include a vegetative plan with planting and seeding dates and fertilizer, lime, and

mulching rates. Distribute copies of the work schedule and erosion control plan to site subcontractors. Address the following in the erosion control plan:

a. Statement of erosion control and stormwater control objectives.

b. Description of temporary and permanent erosion control, stormwater control, and air pollution control measures to be implemented on site.

c. Description of the type and frequency of maintenance activities required for the chosen erosion control methods.

d. Comparison of proposed post-development stormwater runoff conditions with predevelopment conditions.

1.8 WARRANTY

Erosion control material shall have a warranty for use and durable condition for project specific installations. Temporary erosion control materials shall carry a minimum eighteen month warranty. Permanent erosion control materials shall carry a minimum three year warranty.

1.9 TIME LIMITATIONS

Complete backfilling the openings in synthetic grid systems and articulating cellular concrete block systems a maximum 7 days after placement to protect the material from ultraviolet radiation.

PART 2 PRODUCTS

2.1 BINDERS

2.1.1 Synthetic Soil Binders

Calcium chloride, or other standard manufacturer's spray on adhesives designed for dust suppression.

2.1.2 Geosynthetic Binders

Geosynthetic binders shall be manufactured in accordance with ASTM D 1560, ASTM D 2844; and shall be referred to as products manufactured for use as modified emulsions for the purpose of erosion control and soil stabilization. Emulsions shall be manufactured from all natural materials and provide a hard durable finish.

2.2 MULCH

Mulch shall be free from weeds, mold, and other deleterious materials. Mulch materials shall be native to the region.

2.2.1 Straw

Straw shall be stalks from oats, wheat, rye, barley, or rice, furnished in air-dry condition and with a consistency for placing with commercial mulch-blowing equipment.

2.2.2 Hay

Hay shall be native hay, sudan-grass hay, broomsedge hay, or other herbaceous mowings, furnished in an air-dry condition suitable for placing with commercial mulch-blowing equipment.

2.2.3 Wood Cellulose Fiber

Wood cellulose fiber shall be 100 percent recycled material and shall not contain any growth or germination-inhibiting factors and shall be dyed with non-toxic, biodegradable dye an appropriate color to facilitate placement during application. Composition on air-dry weight basis: a minimum 9 to a maximum 15 percent moisture, and between a minimum 4.5 to a maximum 6.0 pH. See Section 013329 LEED(tm) DOCUMENTATION for cumulative total recycled content requirements. This item may contain post-consumer or post-industrial recycled content. Wood cellulose fiber shall not contain environmentally hazardous levels of heavy metals. Materials may be bulk tested or tested by toxicity characteristic leaching procedure (TCLP).

2.2.4 Paper Fiber

Paper fiber mulch shall be 100 percent post-consumer recycled news print that is shredded for the purpose of mulching seed.

2.2.5 Shredded Bark

Locally shredded material shall be treated to retard the growth of mold and fungi.

2.2.6 Wood By-Products

Wood locally chipped or ground bark shall be treated to retard the growth of mold and fungi. Gradation: A maximum 2 inch wide by 4 inch long.

2.2.7 Coir

Coir shall be manufactured from 100 percent coconut fiber cured in fresh water for a minimum of 6 months.

2.2.8 Asphalt Adhesive

Asphalt adhesive shall conform to the following: Emulsified asphalt, conforming to ASTM D 977, Grade SS-1; and cutback asphalt, conforming to ASTM D 2028, Designation RC-70.

2.2.9 Mulch Control Netting and Filter Fabric

Mulch control netting and filter fabric may be constructed of lightweight recycled plastic, cotton, or paper or organic fiber. The recycled plastic shall be a woven or nonwoven polypropylene, nylon, or polyester containing stabilizers and/or inhibitors to make the fabric resistant to deterioration from UV, and with the following properties:

a. Minimum grab tensile strength (TF 25 #1/ASTM D 4632), 180 pounds.

b. Minimum Puncture (TF 25 #4/ASTM D 3787), 75 psi in the weakest direction.

c. Apparent opening sieve size of a minimum 40 and maximum 80 (U.S. Sieve Size).

d. Minimum Trapezoidal tear strength (TF 25 #2/ASTM D 4533), 50 pounds.

2.2.10 Hydraulic Mulch

Hydraulic mulch shall be made of 100 percent recycled material. Wood shall be naturally air-dried to a moisture content of 10.0 percent, plus or minus 3.0 percent. A minimum of 50 percent of the fibers shall be equal to or greater than 0.15 inch in length and a minimum of 75 percent of the fibers shall be

retained on a 28 mesh screen. No reprocessed paper fibers shall be included in the hydraulic mulch. Hydraulic mulch shall have the following mixture characteristics:

CHARACTERISTIC (typical)	VALUE
pH	5.4 ± 0.1
Organic Matter (oven dried basis),	percent 99.3 within ± 0.2
Inorganic Ash (oven dried basis),	percent 0.7 within ± 0.2
Water Holding Capacity,	percent 1,401

2.2.11 Tackifier

Tackifier shall be a blended polyacrylimide material with non-ionic galactomannan of Gramineae endosperm in powder and crystalline form with molecular weights over 250,000.

2.2.12 Dye

Dye shall be a water-activated, green color. Pre-package dye in water dissolvable packets in the hydraulic mulch.

2.3 GEOTEXTILE FABRICS

Geotextile fabrics shall be woven of polypropylene filaments formed into a stable network so that the filaments retain their relative position to each other. Geotextile fabric may contain post-consumer or post-industrial recycled content. Sewn seams shall have strength equal to or greater than the geotextile itself. Install fabric to withstand maximum velocity flows as recommended by the manufacturer. The geotextile shall conform to the following minimum average roll values:

Property	Performance	Test Method
Weight	264 g/m^2	ASTM D 3776/D 3776M
Thickness	0.635 mm	ASTM D 1777
Permeability	0.12 cm/sec	ASTM D 4491
Abrasion Resistance, Type (percent strength retained)	58 percent X 81 percent	ASTM D 3884
Tensile Grab Strength	1,467 N X 1,933 N	ASTM D 4632
Grab Elongation	15 percent X 20 percent	ASTM D 4632
Burst Strength	5,510 kN/m^2	ASTM D 3787
Puncture Strength	733 N	ASTM D 4833
Trapezoid Tear	533 N X 533 N	ASTM D 4533
Apparent Opening Size	40 US Std Sieve	ASTM D 4751
UV Resistance @ 500 hrs	90 percent	ASTM D 4355

2.4 EROSION CONTROL BLANKETS

2.4.1 Erosion Control Blankets Type I

Use Type I blankets for erosion control and vegetation establishment on roadside embankments, abutments, berms, shoulders, and median swales where natural vegetation will provide long term stabilization. Erosion control blankets shall be a machine-produced mat of 100% straw. The blanket shall be of consistent thickness with the straw evenly distributed over the entire area of the mat. Cover the blanket on the top side with a photodegradable polypropylene netting having an approximate 1/2 by 1/2 inch mesh and be sewn together on a maximum 1.5 inch centers with degradable thread. The erosion control blanket shall have the following properties:

Material Content

Straw 100 percent with approximately 0.50 lb/yd^2 weight

Netting One side only, lightweight photodegradable with approximately 1.64 lb/1,000 ft^2 weight.

Thread Degradable

Note 1: Photodegradable life a minimum of 2 months with a minimum 90 percent light penetration. Apply to slopes up to a maximum 3:1 gradient.

2.4.2 Staking

Stakes shall be 100 percent biodegradable manufactured from recycled plastic or wood and shall be designed to safely and effectively secure erosion control blankets for temporary or permanent applications. The biodegradable stake shall be fully degradable by biological activity within a reasonable time frame. The bio-plastic resin used in production of the biodegradable stake shall consist of polylactide, a natural, completely biodegradable substance derived from renewable agricultural resources. The biodegradable stake must exhibit ample rigidity to enable being driven into hard ground, with sufficient flexibility to resist shattering. Serrate the biodegradable stake on the leg to increase resistance to pull-out from the soil.

2.4.3 Staples

Staples shall be as recommended by the manufacturer.

2.5. SEED

2.5.1 Seed Classification

State-certified native seed mix of the latest season's crop shall be provided in original sealed packages bearing the producer's guaranteed analysis for percentages of mixture, purity, germination, hard seed, weed seed content, and inert material. Conform labels to the AMS Seed Act and applicable state seed laws. Submit the Seed Establishment Period information as specified in the Submittals paragraph.

Plant a Hulled Bermuda seed on areas within 25-feet of all buildings and a Midway mix in all other areas. The Bermuda shall be applied at a rate of 1.0 lbs per 1,000 square feet. Seed Mix shall be in accordance with the Midway Mix (Item #2804) as detailed on the following website – http://www.seedsource.com/ and applied at a 10 lb/acre rate. Weed seed shall be a maximum 1 percent by weight of the total mixture.

2.6 AGGREGATE

Aggregate shall be onsite or offsite material generated from grading and demolition operations, as available. Recycled crushed concrete shall be free of steel, free-draining and graded between a minimum 3/4 inch and a maximum 1.5 inches.

2.7 WATER

Unless otherwise directed, water is the responsibility of the Contractor. Water shall be grey water or supplied by an existing irrigation system.

PART 3 EXECUTION

3.1 CONDITIONS

Perform erosion control operations under favorable weather conditions; when excessive moisture, frozen ground or other unsatisfactory conditions prevail, the work shall be stopped as directed. When special conditions warrant a variance to earthwork operations, submit a revised construction schedule for approval. Do not apply erosion control materials in adverse weather conditions which could affect their performance.

3.1.1 Finished Grade

Verify that finished grades are as indicated on the drawings; complete finish grading and compaction in accordance with Section 310000 EARTHWORK, prior to the commencement of the work. Verify and mark the location of underground utilities and facilities in the area of the work. Repair damage to underground utilities and facilities at the Contractor's expense.

3.1.2 Placement of Erosion Control Blankets

Before placing the erosion control blankets, ensure the subgrade has been graded smooth; has no depressed, void areas; is free from obstructions, such as tree roots, projecting stones or other foreign matter. Verify that mesh does not include invasive species. Vehicles will not be permitted directly on the blankets.

3.2 SITE PREPARATION

3.2.1 Layout

Erosion control material locations may be adjusted to meet field conditions. When soil tests result in unacceptable particle sizes, a shop drawing shall be submitted indicating the corrective measures.

3.2.2 Protecting Existing Vegetation

When there are established lawns in the work area, the turf shall be covered and/or protected or replaced after construction operations. Identify existing trees, shrubs, plant beds, and landscape features that are to be preserved on site by appropriate tags and barricade with reusable, high-visibility fencing along the dripline. Mitigate damage to existing trees at no additional cost to the Government. Damage shall be assessed by a state certified arborist or other approved professional using the National Arborist Association's tree valuation guideline.

3.2.3 Obstructions Below Ground

When obstructions below ground affect the work, submit shop drawings showing proposed adjustments to placement of erosion control material for approval.

3.3 INSTALLATION

Immediately stabilize exposed soil using fabric and seed. Stabilize areas for construction access immediately as specified in the paragraph Construction Entrance. Install principal sediment basins and traps before any major site grading takes place. Provide additional sediment traps and sediment fences as grading progresses. Provide inlet and outlet protection at the ends of new drainage systems.

3.3.1 Construction Entrance

Provide as indicated on drawings, a minimum of 6 inches thick, at points of vehicular ingress and egress on the construction site. Construction entrances shall be cleared and grubbed, and then excavated a minimum of 3 inches prior to placement of the filter fabric and aggregate. The aggregate shall be placed in a manner that will prevent damage and movement of the fabric. Place fabric in one piece, where possible. Overlap fabric joints a minimum of 12 inches.

3.3.2 Seeding

When seeding is required prior to installing mulch on synthetic grid systems verify that seeding will be completed in accordance with Sections 31 00 00 EARTHWORK and 32 92 19 SEEDING.

3.3.3 Mulch Installation

Install mulch in the areas indicated. Apply mulch evenly at the rate of a minimum of 2 inches of thickness.

3.3.4 Mulch Control Netting

Netting may be stapled over mulch according to manufacturer's recommendations.

3.3.5 Mechanical Anchor

Mechanical anchor shall be a V-type-wheel land packer; a scalloped-disk land packer designed to force mulch into the soil surface; or other suitable equipment.

3.3.6 Asphalt Adhesive Tackifier

Asphalt adhesive tackifier shall be sprayed at a rate between 10 to 13 gallons/1000 square feet. Do no completely exclude sunlight from penetrating to the ground surface.

3.3.7 Non-Asphaltic Tackifier

Apply hydrophilic colloid at the rate recommended by the manufacturer, using hydraulic equipment suitable for thoroughly mixing with water. Apply a uniform mixture over the area.

3.3.8 Asphalt Adhesive Coated Mulch

Hay or straw mulch may be spread simultaneously with asphalt adhesive applied at a rate between 10 to 13 gallons/1000 square feet, using power mulch equipment equipped with suitable asphalt pump and nozzle. Apply the adhesive-coated mulch evenly over the surface. Do not completely exclude sunlight from penetrating to the ground surface.

3.3.9 Wood Cellulose Fiber, Paper Fiber, and Recycled Paper

Apply wood cellulose fiber, paper fiber, or recycled paper as part of the hydraulic mulch operation.

3.3.10 Hydraulic Mulch Application

3.3.10.1 Seeded Area

For drill or broadcast seeded areas, apply hydraulic mulch evenly at the rate of 4.8 lb per acre. For hydraulic seeded areas, apply mulch at the rate of 2 inches thickness with the seed and fertilizer.

3.3.11 Erosion Control Blankets

a. Install erosion control blankets as indicated and in accordance with manufacturer's recommendations. The extent of erosion control blankets shall be as shown on drawings.

b. Orient erosion control blankets in vertical strips and anchored with staples, as indicated. Abut adjacent strips to allow for installation of a common row of staples. Overlap horizontal joints between erosion control blankets sufficiently to accommodate a common row of staples with the uphill end on top.

c. Where exposed to overland sheet flow, locate a trench at the uphill termination. Staple the erosion control blanket to the bottom of the trench. Backfill and compact the trench as required.

d. Where terminating in a channel containing an installed blanket, the erosion control blanket shall overlap installed blanket sufficiently to accommodate a common row of staples.

3.3.12 Seeding, Fertilizing, Mulching

Install seed in accordance with Section 32 92 19 SEEDING.

3.3.13 Sediment Fencing

Install posts at the spacing indicated on drawings and at an angle between 2 degrees and 20 degrees towards the potential silt load area. Sediment fence height shall be approximately 16 inches. Do not attach filter fabric to existing trees. Secure filter fabric to the post and wire fabric using staples, tie wire, or hog rings. Imbed the filter fabric into the ground as indicated on drawings. Splice filter fabric at support pole using a 6 inches overlap and securely seal.

3.4 CLEAN-UP

Dispose of excess material, debris, and waste materials offsite at an approved landfill or recycling center. Clear adjacent paved areas. Immediately upon completion of the installation in an area, protect the area against traffic or other use by erecting barricades and providing signage as required, or as directed. Signage shall be in accordance with Section 101401 EXTERIOR SIGNAGE.

3.5 WATERING SEED

Start watering immediately after installing erosion control blanket type XI (revegetation mat). Apply water to supplement rainfall at a sufficient rate to ensure moist soil conditions to a minimum 1 inch depth. Prevent run-off and puddling. Do no drive watering trucks over turf areas, unless otherwise directed. Prevent watering of other adjacent areas or plant material.

3.6 MAINTENANCE RECORD

Furnish a record describing the maintenance work performed, record of measurements and findings for product failure, recommendations for repair, and products replaced.

3.6.1 Maintenance

Maintenance shall include eradicating weeds; protecting embankments and ditches from surface erosion; maintaining the performance of the erosion control materials and mulch; protecting installed areas from traffic.

3.6.2 Maintenance Instructions

Furnish written instructions containing drawings and other necessary information, describing the care of the installed material; including, when and where maintenance should occur, and the procedures for material replacement.

3.6.3 Patching and Replacement

Unless otherwise directed, material shall be placed, seamed or patched as recommended by the manufacturer. Remove material not meeting the required performance as a result of placement, seaming or patching from the site. Replace the unacceptable material at no additional cost to the Government.

3.7 SATISFACTORY STAND OF GRASS PLANTS

A satisfactory stand of grass plants from the revegetation area shall have 85% of the ground area covered by grass.

END OF SECTION

SECTION 32 11 24

GRADED CRUSHED AGGREGATE BASE COURSE FOR FLEXIBLE PAVEMENT

PART 1 GENERAL

1.1 RELATED DOCUMENTS

The Conditions of the Contract, including the Uniform General and Supplementary General Conditions, Owner's Special Conditions, and Division 1 – General Requirements, apply to work specified in this Section.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM C 117	(2004) Standard Test Method for Materials Finer than 75-um (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 131	(2006) Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C 136	(2006) Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM C 29/C 29M	(2007) Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate
ASTM D 1556	(2007) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	(2007) Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3) (2700 kN-m/m3)
ASTM D 1883	(2007) CBR (California Bearing Ratio) of Laboratory Compacted Soils
ASTM D 2217	(1985; R 1998) Wet Preparation of Soil Samples for Particle-Size Analysis and Determination of Soil Constants
ASTM D 5195	(2005) Standard Method for Density of Soil In-Place by Nuclear Methods
ASTM D 3017	(2005) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
ASTM D 4318	(2005) Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D 75	(2003) Standard Practice for Sampling Aggregates

U.S. GREEN BUILDING COUNCIL (USGBC)

LEED	(2002; R 2005) Leadership in Energy and Environmental Design(tm) Green Building Rating System for New Construction (LEED-NC)

1.3 SUBMITTALS

The following shall be submitted in accordance with Section 013300 SUBMITTAL PROCEDURES:

SD-03 Product Data

Aggregates

SD-06 Test Reports

Gradation

Liquid limit

Plasticity index

Percentage of wear

1.4 DELIVERY AND STORAGE

Inspect materials delivered to site for damage and store as to prevent segregation and contamination.

1.5 WEATHER LIMITATIONS

Do not construct base course when atmospheric temperature is below 35°F or when rainfall or other weather conditions detrimentally affect the quality of the finished course.

1.6 CONSTRUCTION EQUIPMENT

Equipment shall be dependable and adequate for the purpose intended. Maintain equipment in satisfactory and safe operating condition. Subject to approval, special equipment dictated by local conditions may be used. Calibrated equipment, such as scales, batching equipment, spreaders, and similar items, shall have been recalibrated by an approved calibration laboratory within 12 months of commencing work.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Aggregates

Shall comply with TxDOT Item 247, Grade 1 or 2, Type “A”.

PART 3 EXECUTION

3.1 BASE COURSE

Construct the graded aggregate base course on a prepared subgrade as indicated. Verify compacted subgrade, granular base, or stabilized soil is acceptable and ready to support paving and imposed loads. Provide line and grade stakes for control. Place grade stakes in lanes parallel to the centerline of areas to be paved and space for string lining or other control methods. The base course shall consist of aggregate processed, deposited, spread, and

compacted on a prepared surface. The Contractor shall be responsible for protection of completed areas against detrimental effects. Recondition, reshape, and recompact areas damaged by freezing, rainfall, or other weather conditions.

3.2 MIXING OF MATERIALS

Mix aggregates in a stationary or traveling plant. Proportion aggregates by weight or volume in such quantities that specified gradation, liquid limit, and plasticity index requirements are met after the base course has been placed and compacted. Incorporate, during the mixing operation, water in quantities sufficient to provide the necessary moisture content for the specified compaction. Mixing operations shall produce satisfactory uniform blending and the method of discharging into trucks shall not produce segregation.

3.3 PLACING

Do not dump mixed materials in piles, but place on prepared subgrade or subbase in layers of uniform thickness with a spreader. When a compacted course 6 inches in thickness is required, place material in a single layer. When a compacted course in excess of 6 inches is required, place material in layers of equal thickness. Do not exceed 6 inches or have less than 3 inches in thickness for any compacted layer. Place layers so that when compacted, they will be true to grades or levels required with the least possible surface disturbance. Where the base course is constructed in more than one layer, clean previously constructed layers of loose and foreign matter. Maintain material water content during the placing period to obtain the compaction specified. Make adjustments in placing procedures or equipment to obtain true grades, to minimize segregation and degradation, to reduce or increase water content, and to insure a satisfactory base course.

3.3.1 Stationary-Plant Method

Mix aggregates, binder material and water until a uniform homogeneous mixture is obtained. Do not dump materials in piles; place in layers of essentially uniform thickness, not to exceed 6 inches after compaction, by an approved spreader. Tail gate spreading will be acceptable only with permission, under conditions such as where space limitations prohibit use of the spreader.

3.3.2 Windrow Traveling-Plant Method

Place aggregates and binder materials in windrows of such cross section and proportions that, when picked up, mixed, and redeposited in windrows, the finished mixture shall conform to the specified requirements. Do not exceed the rated capacity of the traveling plant with the size of the windrow of the combined materials. Add water, in quantity sufficient to provide the necessary moisture content for compacting, to the aggregates at the time of mixing. Mix materials uniformly by the traveling plant, deposit in windrows of uniform cross section, and spread in a layer of uniform thickness to the required contour and grades.

3.4 COMPACTING AND FINISHING

Immediately following the placing, spread the finished mixture uniformly in a layer and bring to optimum moisture content. The loose thickness and the surface of the layer shall be such that the specified density and the required thickness shall be obtained after compaction. Compact the layer with steel-faced, vibrating or pneumatic-tired rollers, or other suitable compacting equipment or combinations thereof. Continue compacting until the layer is compacted through the full depth to a field density of at least 95 percent of the maximum density at optimum moisture content tested in accordance with ASTM D 5195. In areas not accessible to rollers or compactors, compact the mixture with mechanical hand tampers. If the mixture is excessively moistened by rain, aerate by blade graders, or other suitable equipment. Aerate until the moisture content of the material is that needed to obtain the required density. Finish the surface of the layer by a combination of rolling and blading. Final surface shall be smooth and free from waves, irregularities, and ruts or soft yielding spots.

3.5 PROOF ROLLING

NOT USED

3.6 FINISHING AT EDGES OF BASE COURSE

Place earth or other approved materials along the edges of the base course in such quantity that it will compact to the thickness of the course being constructed. When the course is being constructed in two or more layers, place material to the thickness of each layer. In each operation, allow at least a one-foot width of the shoulder to be rolled and compacted simultaneously with the rolling and compacting of each layer.

3.7 FIELD QUALITY CONTROL

Approve materials and material sources in advance of the use of such materials in the work.

3.7.1 Testing

3.7.1.1 Aggregates – Not required

3.7.1.2 Smoothness Tests

Test with a 10-foot straight edge, applied parallel with and at right angles to the center line of the paved area. Correct deviations in the surface in excess of 1/2 inch by loosening, adding or removing material, reshaping, watering, and compacting. The smoothness requirements specified herein apply only to the top layer when base course is constructed in more than one layer.

3.7.1.3 Field Density Tests

ASTM D 1556. Take one test for each 500 square yards of each layer of base course.

3.7.1.4 Laboratory Density Tests

In accordance with ASTM D 698.

3.7.1.5 Thickness Tests

Measure thickness of base course at intervals such that there will be a depth measurement for at least each 500 square yards of complete base course. Make depth measurements by test holes, at least 3 inches in diameter, through the base course. Where base course deficiency is more than 1/2 inch, correct by scarifying, adding mixture of proper gradation, reblading, and recompacting. Where the measured thickness is more than 1/2 inch thicker than indicated, consider it as the indicated thickness plus 1/2 inch for determining the average. The average thickness is the average of the depth measurements and shall not underrun the thickness indicated.

3.8 MAINTENANCE

After construction is completed, maintain the base course throughout, except where portion of the succeeding course is under construction thereon. Maintenance includes drainage, rolling, shaping, and watering, as necessary, to maintain the course in proper condition. Correct deficiencies in thickness, composition, construction, smoothness, and density, which develop during the maintenance, to conform to the requirements specified herein. Maintain sufficient moisture by light sprinkling with water at the surface to prevent a dusty condition.

END OF SECTION

SECTION 32 11 30

LIME TREATED SUBGRADE

PART 1 GENERAL

1.1 RELATED DOCUMENTS

The Conditions of the Contract, including the Uniform General and Supplementary General Conditions, Owner's Special Conditions, and Division 1 – General Requirements, apply to work specified in this Section.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

AASHTO M 216	(2005) Lime for Soil Stabilization
AASHTO T 102	(1983; R 2004) Spot Test of Asphaltic Materials
AASHTO T 219	(1987; R 2004) Testing Lime for Chemical Constituents and Particle Sizes
AASHTO T 27	(2006) Sieve Analysis of Fine and Coarse Aggregates

ASTM INTERNATIONAL (ASTM)

ASTM C 207	(2006) Standard Specification for Hydrated Lime for Masonry Purposes
ASTM C 25	(2006) Standard Test Method for Chemical Analysis of Limestone, Quicklime, and Hydrated Lime
ASTM C 977	(2003) Quicklime and Hydrated Lime for Soil Stabilization
ASTM D 1556	(2007) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	(2007) Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3) (2700 kN-m/m3)
ASTM D 2397	(2005) Standard Specification for Cationic Emulsified Asphalt
ASTM D 5195	(2005) Standard Method for Density of Soil In-Place by Nuclear Methods
ASTM D 3017	(2005) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
ASTM D 3551	(2002) Laboratory Preparation of Soil-Lime Mixtures Using a Mechanical Mixer
ASTM D 977	(2005) Emulsified Asphalt

NATIONAL LIME ASSOCIATION (NLA)

NLA BUL 326	(2004) Lime-Treated Soil Construction Manual: Lime Stabilization and Lime Modification

1.3 SUBMITTALS

The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-04 Samples

Not used.

SD-05 Design Data

Job-mix formula

Mixing procedures

SD-06 Test Reports

Site preparation test

Final compaction report

SD-07 Certificates

Bituminous curing seal

Lime

1.4 DELIVERY AND STORAGE

Deliver lime, bituminous materials in containers showing or including designated trade name, product identification, specification number, manufacturers name, and source. Store in a manner that will prevent moisture damage, overexposure, and contamination.

1.5 WEATHER LIMITATIONS

Do not construct subgrade when weather conditions detrimentally affect the quality of the materials. Do not apply lime unless the air temperature is at least 40°F in the shade and rising. Do not apply lime to soils that are frozen or contain frost. If the air temperature falls below 35°F in the shade, protect completed lime-treated areas by approved methods against the detrimental effects of freezing. Remove and replace any damaged portion of the completed soil-lime treated area with new soil-lime material in accordance with this specification.

1.6 QUALITY ASSURANCE

1.6.1 Required Data

Ten days prior to the commencement of the work, a job-mix formula showing the amount of lime and water required per cubic yard, and procedures for blending the lime/subgrade mixture for each type of existing soil. Include process type and number of: Lime applications, stages of mixing, slurry injection depths, mixing depths and depths of compaction lifts. Also, a list of equipment to be used and their relation to method of mixing proportioning, spreading, pulverizing and compacting subgrade, slurry injection, jet slurry mixing and other related work. The formula shall also contain amount of lime, either in sacks or pounds per cubic yard and the amount of

water to be used, if slurry method is used. Use the following laboratory test method when applicable: ASTM D 3551.

PART 2 PRODUCTS

2.1 LIME TREATMENT REQUIREMENTS

Perform lime treatment of subgrade. Scarify subgrade soil and mix uniformly with lime and water, spread, shape, compact and cure in accordance with these specifications and the following requirements:

Lime requirement: The percent of hydrated lime by weight of dry soil material will be determined by a Geotechnical Report or by the contractor's lab test. The testing shall include an analysis of whether the soils being treated have sulfates that will react with the lime. If sulfates are present additional lime treatment will be required as an additional service.

2.1.1 Hydrated Lime

2.1.1.1 Type I
AASHTO M 216 Grade A.

2.1.1.2 Type II
AASHTO M 216, Grade A.

2.1.1.3 Type III
Magnesium or dolomitic lime containing magnesium, calculated as magnesium oxide no more than 41 percent by weight and in compliance with ASTM C 977.

2.1.1.4 Type IV
By-Product, Waste, Salvaged or Specially Formulated Lime. ASTM C 207, Type N with the following modifications:

A. Total calcium and magnesium oxides (nonvolatile basis) equal 60 percent minimum.
B. Available calcium hydroxide (rapid sugar test), ASTM C 25 plus total MgO content calculated to be an equivalent $Ca(OH)_2$ equal 30 percent minimum.
C. Loss on ignition (carbon dioxide plus moisture, combined and free) as-received basis equal 35 percent maximum sampled at place of manufacture or 40 percent maximum, if sampled other than at place of manufacture.
D. Free water (as received basis) equal 4 percent maximum.
E. Residue: Sieve analysis of lime as follows:

Sieve	Maximum Percent Retained
No. 4	0
No. 30	5.0
No. 100	20.0

F. No requirements for plasticity, pops or pits, or water retention.

2.1.2 Quicklime
NOT USED

2.2 SOIL

The inorganic natural material in the area to be stabilized unless imported material, relocated material, or preliminary earthwork is required: See Section 31 00 00 EARTHWORK. Remove stones retained on a 3 inch sieve and deleterious substances such as sticks, debris, and vegetable matter.

2.3 WATER
Potable.

2.4 BITUMINOUS CURING SEAL

2.4.1 Emulsified Asphalt
Conform to ASTM D 977, Type SS-1 or Type SS-1h; ASTM D 2397, Type CSS-1 or Type CSS-1h. The base asphalt used to manufacture the emulsion shall show a negative spot when tested in accordance with AASHTO T 102 using standard naphtha.

PART 3 EXECUTION

3.1 SITE PREPARATION
Clean debris from area to be stabilized. Perform clearing and grubbing to a depth of 6 inches. Remove rocks larger than 3 inches. Inspect original ground for adequacy for the forthcoming compactive effort of lime treatment work. Rough grade and shape the area to be stabilized to conform to the lines, grades, and cross sections indicated. Comply with subgrade requirements of Section 31 00 00 EARTHWORK.

3.1.1 Grade Control
When stabilized course is to be constructed to meet a fixed grade, provide adequate line and grade stakes for control. Finished and completed stabilized areas shall conform to the lines, grades, cross section, and dimensions indicated. Locate grade stakes in lanes parallel to center line of areas under construction, and suitably placed for string lining. Maintain line and grade.

3.1.2 Soil Testing
Test original ground prior to scarification in accordance with ASTM D 698.

3.2 LIME TREATMENT AND SEQUENCE OF CONSTRUCTION OPERATIONS
Comply with NLA BUL 326 and sequence of construction operations, unless specified otherwise hereinafter.

3.2.1 Application Requirements
After site preparation, scarify subgrade and spread lime. Blend lime into subgrade to required depth as indicated. Apply lime and water only to those areas where mixing operations can be completed during the same working day. Accomplish application and mixing of lime by either the dry placing method or the slurry method. Use same method during any single days operation. Double application of lime is required; percentage of lime for the initial application shall be between 2 and 3 percent. Apply curing seal as specified hereinafter and allow 6 to 7 days curing.

3.2.2 Scarification
After obtaining required line and grade, scarify and partially pulverize the subgrade. Remove organic materials such as stumps and roots. Remove rocks larger than 3 inches.

3.2.3 Dry Placing
Spread and distribute lime at a uniform rate with protection from wind as an important distribution and timing criteria. Prevent dry lime from blowing by adding water to lime or by other suitable means. Do not apply lime when wind conditions, in the opinion of the Engineer, are objectionable.

3.2.4 Slurry Method
Apply or inject mixture of lime and water into the existing soil. Maintain the water content at 5 percent above optimum during application to lime/soil mixture. Prepare hydrate slurry either in a central mixing tank or tank trucks, with agitation provided for mixing or using a jet slurry maker. Prepare quicklime slurry using a portable batch slaking unit. Accurately weigh or meter lime and water. Standard water or asphalt trucks, properly cleaned, with or without pressure distributors, may be used to apply lime treatment. Spread or inject lime slurry evenly to yield uniform

distribution of lime throughout soil. Distribute lime in successive passes over subgrade materials until proper amount of lime has been spread or injected to proper depth. Continually agitate slurry to keep mixture uniform. Keep pumps, distribution spray bars, slurry injection equipment and other equipment clean of excessive lime slurry. The Contractor's laboratory shall verify the specified amount and rate of application of lime for the various materials encountered.

3.2.5 Preliminary Mixing and Watering

Distribute lime uniformly by mixing and pulverizing subgrade. During mixing, add water to subgrade to provide a moisture content of 5 percent above optimum moisture content of material and to insure chemical action of lime and subgrade materials. Mixer shall continue making passes until it has produced a homogeneous, uniform mixture of lime, soil, and water. Continue mixing or remixing operations, until material is free of streaks or pockets of lime and mixture is uniform as indicated by testing. After initial mixing, shape and roll subgrade lightly to seal surface in order to reduce evaporation of moisture and lime carbonation.

3.2.6 Preliminary Curing

Moisture cure lime-soil mixture up to 48 hours until adhesive quality of clay is reduced to almost normal soil consistency. Allow 7 days or more for curing heavy clays.

3.2.7 Mixing, Uniformity Testing and Compaction

After dry lime or lime slurry is uniformly applied to soil and mixture is pulverized and cured, continue mixing until individual agglomerates of soil do not exceed one inch in maximum dimension (soil particles will pass a one inch sieve with at least 60 percent passing the No. 4 sieve). Continue mixing and re-mixing until material is uniformly mixed. Moisture shall be at approximately 2 percent over optimum for material other than rock. Compact lime-treated material immediately after final mixing and testing. Aerate or sprinkle as necessary to provide optimum moisture content during compaction. Compact lime-treated material in specified lifts to 95 percent of maximum density at optimum moisture content in accordance with ASTM D 698. Base density value on a representative soil sample obtained from site and treated with required proportion of lime. As compaction progresses, maintain the shape of the lifts by blading. Surface upon completion shall be smooth and conform to indicated section and established lines and grades. Perform initial compaction with sheepsfoot roller or other suitable roller. Perform final rolling by means of sheepsfoot, steel-tired, or pneumatic rollers.

3.2.8 Two-Stage Pulverization and Mixing

After curing, pulverize lime treated material until soil particles pass a one inch sieve and 60 percent pass the No. 4 sieve. If resultant mixture contains clods, reduce their size by scarifying, remixing, or pulverization to meet specified gradation.

3.2.9 Finishing

Surface of finished lime-treated material after compaction shall be the established graded plane. At any point the surface shall not vary more than 0.05 foot above or below established grade. Finish completed section by rolling with a pneumatic or suitable roller sufficiently light to prevent hairline cracking. Keep surface of each compacted layer of lime-treated material moist until covered by a subsequent layer of lime-treated material or curing seal.

3.2.10 Limit of Daily Operations (Temporary Joints)

At the end of each working day, prepare a temporary joint in fully compacted material normal to paved surface centerline. Construct a longitudinal temporary joint for partial width sections against which future material is to be placed. Remove temporary joints during next work period by trimming 3 inches into treated material for continuity. Trimmed material may be incorporated in subsequent work. Temporary joints shall not coincide with any longitudinal or transverse temporary joint location of previous or subsequent construction. Remixing 4 inches into the previous day's work may be substituted for joints providing the method and equipment is acceptable to the Engineer.

3.2.11 Final Curing

3.2.11.1 Curing

Cure lime-treated material for 72 hours. During curing period, add water to surface to maintain moisture content of mixture at five percent above optimum water content. Lime that has been overexposed to open air shall be removed and disposed of off-station. Moist curing (water only): Keep surface damp by sprinkling and use light rollers to keep surface knitted together (preventing surface cracks) until following course of material is placed.

3.3 TRAFFIC CONTROL, CURING MAINTENANCE AND DRAINAGE PROTECTION

Keep traffic off surfaces freshly treated with bituminous material. Provide warning signs and barricades so that traffic will not travel over freshly treated surfaces. Do not permit equipment or traffic on lime-treated material until subgrade stability is assured. Maintain finished surface until work has been completed. Provide drainage during entire period of construction to prevent water from collecting or standing on area to be stabilized.

3.4 EQUIPMENT LIMITATIONS

3.4.1 General

The type of equipment to be used for each category of work shall conform to the NLA BUL 326 unless specified otherwise. Maintain equipment in satisfactory and safe operating condition.

3.4.2 Spreading Equipment

At windy locations use an approved screw type spreader box, mixer, or other semi-enclosed equipment which will offer protection from wind. Spreading hydrated lime by aggregate spreaders, dump trucks or agricultural spreaders is not allowed. Spreading by end-dumping, or tailgate control methods are not allowed. Change or alter equipment to be used in the event of non-uniform spreading of lime.

3.4.3 Additional Mixing Equipment Limitations

A. Motor graders will not be allowed to mix lime with clays.

B. Deep-lift rotary mixers may be used and may facilitate changes in specified depths of operation, providing equipment and method of operation sustains uniform distribution of lime with required compacted density throughout the deeper layer, with approval of the Engineer.

3.4.4 Additional Compaction Equipment Limitations

Unauthorized equipment, hauling or transportation vehicles will not be allowed for compaction purposes.

3.5 SAFETY REQUIREMENTS

In addition to the Contract Clause entitled "Accident Prevention", prevent employee eye or skin contact with quicklime during transport or application. Provide and require employees use the following:

A. Protective clothing, high top boots, gauntlet-type gloves and protective headwear

B. Splash-proof safety goggles and face shields

C. Protective cream.

3.6 TESTS

3.6.1 General

Perform sampling and testing using a laboratory which has been inspected by the Cement and Concrete Reference Laboratory (of ASTM/CCRL) within the past 3 years or by an approved independent commercial testing laboratory. Frequency of sampling and testing of materials for conformance and quality control shall be as specified herein and shall be performed at such other times as necessary to document contract compliance. Test reports and results shall be certified by the laboratory and submitted together with Contractor's daily certification.

3.6.2 Optimum Moisture, Maximum Density

Perform optimum moisture, maximum density test on lime-treated material sampled after final mixing and prior to final compaction. Soil mixture shall be laboratory compacted within 3 hours of sampling and then moist-cured for 24 hours prior to optimum moisture-maximum density determination. Test in accordance with ASTM D 698 and the Job-Mix Formula.

3.6.3 Uniformity Tests

After placement and mixing of each lift perform a series of uniformity tests. Excavate a hole 10 inches in diameter through full depth of lift and impregnate sides of hole with a standard phenolphthalein alcohol indicator. Non-conformity of color reaction, when material is treated as above, will be considered evidence of inadequate mixing.

3.6.4 Compaction

Perform in-place density test to determine degree of compaction between 24 and 72 hours after final compaction and 24 hour moist cure period. Test in accordance with ASTM D 5195.

3.6.5 Thickness and Smoothness

Thickness of final lime treated subgrade shall be not less than thickness shown. Final grade smoothness shall not deviate by more than 3/8 inch, when tested with a 10 foot straightedge.

3.6.6 Field Application Rate Test

Test for checking initial lime spreading rate.

3.6.7 Frequency of Tests

The minimum number and type of quality control tests shall be as follows:

A. Optimum moisture, maximum density. Two of each type or change of material with in-place density requirements.

B. Thickness, smoothness and uniformity. Two tests each day for every 1000 square yards or less mixed and placed.

C. Field density. One set of 3 tests for each lift for every 2000 square yards or less.

END OF SECTION

SECTION 32 12 10

HMAC TACK AND PRIME COATS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

The Conditions of the Contract, including the Uniform General and Supplementary General Conditions, Owner's Special Conditions, and Division 1 – General Requirements, apply to work specified in this Section.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

AASHTO M 20	(1970; R 2004) Penetration-Graded Asphalt Cement
AASHTO M 226	(1980; R 2004) Viscosity Graded Asphalt Cement
AASHTO M 81	(1992; R 2004) Cut-Back Asphalt (Rapid-Curing Type)
AASHTO M 82	(1975; R 2004) Cut-Back Asphalt (Medium-Curing Type)
AASHTO T 102	(1983; R 2004) Spot Test of Asphaltic Materials
AASHTO T 40	(2002; R 2006) Sampling Bituminous Materials

ASTM INTERNATIONAL (ASTM)

ASTM D 1250	(2007) Standard Guide for Use of the Petroleum Measurement Tables
ASTM D 140	(2001; R 2007) Sampling Bituminous Materials
ASTM D 2026	(1997; R 2004) Cutback Asphalt (Slow-Curing Type)
ASTM D 2027	(1997; R 2004) Cutback Asphalt (Medium-Curing Type)
ASTM D 2028	(1997; R 2004) Cutback Asphalt (Rapid-Curing Type)
ASTM D 2397	(2005) Standard Specification for Cationic Emulsified Asphalt
ASTM D 2995	(1999; R 2004) Determining Application Rate of Bituminous Distributors
ASTM D 3381	(2005) Viscosity-Graded Asphalt Cement for Use in Pavement Construction
ASTM D 946	(1982; R 2005) Penetration-Graded Asphalt Cement for Use in Pavement Construction
ASTM D 977	(2005) Emulsified Asphalt

U.S. GREEN BUILDING COUNCIL (USGBC)

LEED	(2002; R 2005) Leadership in Energy and Environmental Design(tm) Green Building Rating System for New Construction (LEED-NC)

1.3 SYSTEM DESCRIPTION

1.3.1 General Requirements

Plant, equipment, machines and tools used in the work are subject to approval and shall be maintained in a satisfactory working condition at all times. Calibrated equipment such as asphalt distributors, scales, batching equipment, spreaders and similar equipment, should have been recalibrated by a calibration laboratory within 12 months prior to commencing work and every 12 months thereafter, by such laboratory from the date of recalibration, during the term of the contract.

1.3.2 Bituminous Distributor

Provide a distributor with pneumatic tires of such size and number that the load produced on the base surface does not exceed 650 psi of tire width to prevent rutting, shoving or otherwise damaging the base surface or other layers in the pavement structure. Design and equip the distributor to spray the bituminous material in a uniform coverage at the specified temperature, at readily determined and controlled rates from 0.05 to 2.0 gallons per square yard, with a pressure range of 25 to 75 psi and with an allowable variation from the specified rate of not more than plus or minus 5 percent, and at variable widths. Include with the distributor equipment a separate power unit for the bitumen pump, full-circulation spray bars, tachometer, pressure gauges, volume-measuring devices, adequate heaters for heating of materials to the proper application temperature, a thermometer for reading the temperature of tank contents, and a hand hose attachment suitable for applying bituminous material manually to areas inaccessible to the distributor. Equip the distributor to circulate and agitate the bituminous material during the heating process.

1.3.3 Heating Equipment for Storage Tanks

The equipment for heating the bituminous material shall be steam, electric, or hot oil heaters. Provide steam heaters consisting of steam coils and equipment for producing steam, so designed that the steam cannot get into the material. Fix an armored thermometer to the tank with a temperature range from 40 to 400°F so that the temperature of the bituminous material may be determined at all times.

1.3.4 Power Brooms and Power Blowers

Use power brooms and power blowers suitable for cleaning the surfaces to which the bituminous coat is to be applied.

1.4 SUBMITTALS

Submit the following in accordance with Section 013300 SUBMITTAL PROCEDURES:

SD-03 Product Data

Delivery tickets, during progress of the work.

SD-06 Test Reports

Sampling and Testing

Copies of all test results for emulsified asphalt, and bituminous materials, within 48 hours of completion of tests. Certified copies of the manufacturer's test reports indicating temperature viscosity relationship for cutback asphalt, compliance with applicable specified requirements, not less than 30 days before the material is required in the work.

1.5 QUALITY ASSURANCE

Tack and prime coat materials may be locally available.

1.6 DELIVERY, STORAGE, AND HANDLING

Inspect the materials delivered to the site for contamination and damage. Unload and store the materials with a minimum of handling.

1.7 ENVIRONMENTAL REQUIREMENTS

Apply bituminous coat only when the surface to receive the bituminous coat is dry. Apply bituminous coat only when the atmospheric temperature in the shade is 50°F or above and when the temperature has not been below 35°F for the 12 hours prior to application, unless otherwise directed.

PART 2 PRODUCTS

2.1 PRIME COAT

Provide asphalt conforming to AASHTO M 81 and AASHTO M 82, specified in the following two subparagraphs.

2.1.1 Emulsified Asphalt

Provide emulsified asphalt conforming to ASTM D 977, Type SS-1 and SS1h or ASTM D 2397, Type CSS-1 and CSS-1h.

2.2 TACK COAT

Provide asphalt conforming to AASHTO M 81 AASHTO M 20 and AASHTO M 226.

2.2.1 Emulsified Asphalt

Provide emulsified asphalt conforming to ASTM D 977, Type SS-1 or SS1h and ASTM D 2397, Type CSS-1 or CSS-1h. Dilute the emulsified asphalt with equal parts of water. The base asphalt used to manufacture the emulsion shall show a negative spot when tested in accordance with AASHTO T 102 using standard naphtha.

PART 3 EXECUTION

3.1 PREPARATION OF SURFACE

Immediately before applying the bituminous coat, remove all loose material, dirt, clay, or other objectionable material from the surface to be treated by means of a power broom or blower supplemented with hand brooms. The surface shall be dry and clean at the time of treatment.

3.2 APPLICATION RATE

The exact quantities within the range specified, which may be varied to suit field conditions, will be determined by the Engineer.

3.2.1 Tack Coat

Apply bituminous material for the tack coat in quantities of not less than 0.05 gallon nor more than 0.15 gallon per square yard of pavement surface.

3.2.2 Prime Coat

Apply bituminous material for the prime coat in quantities of not less than 0.15 gallon nor more than 0.40 gallon per square yard of pavement surface.

3.3 APPLICATION TEMPERATURE

3.3.1 Viscosity Relationship

Asphalt application temperature shall provide an application viscosity between 10 and 60 seconds, Saybolt Furol, or between 20 and 120 centistokes, kinematic.

3.3.2 Temperature Ranges

The viscosity requirements determine the application temperature to be used. The following is a normal range of application temperatures:

Emulsions	
SS-1	70-160°F
SS-1h	70-160°F
CSS-1	70-160°F
CSS-1h	70-160°F

These temperature ranges exceed the flash point of the material and care should be taken in their heating.

3.4 APPLICATION

3.4.1 General

Following preparation and subsequent inspection of the surface, apply the bituminous prime or tack coat with the Bituminous Distributor at the specified rate with uniform distribution over the surface to be treated. Properly treat all areas and spots missed by the distributor with the hand spray. Until the succeeding layer of pavement is placed, maintain the surface by protecting the surface against damage and by repairing deficient areas at no additional cost to the owner. If required, spread clean dry sand to effectively blot up any excess bituminous material. No smoking, fires, or flames other than those from the heaters that are a part of the equipment are permitted within 25 feet of heating, distributing, and transferring operations of bituminous material other than bituminous emulsions. Prevent all traffic, except for paving equipment used in constructing the surfacing, from using the underlying material, whether primed or not, until the surfacing is completed. The bituminous coat shall conform to all requirements as described herein.

3.4.2 Prime Coat

The prime coat is required if it will be at least 7 days before the surfacing (Asphalt cement hot mix concrete) layer is constructed on the underlying (base course, etc.) compacted material. The type of liquid asphalt and application rate will be as specified herein. Protect the underlying from any damage (water, traffic, etc.) until the surfacing is placed. If the Contractor places the surfacing within seven days, the choice of protection measures or actions to be taken is at the Contractor's option. Repair (recompact or replace) damage to the underlying material caused by lack of, or inadequate, protection by approved methods at no additional cost to the owner. If the Contractor opts to use the prime coat, apply as soon as possible after consolidation of the underlying material. Apply the bituminous material uniformly over the surface to be treated at a pressure range of 25 to 75 psi and at the rate of not less than 0.20 gallon not more than 0.30 gallon per square yard. To obtain uniform application of the prime coat on the surface treated at the junction of previous and subsequent applications, spread building paper on the surface for a sufficient distance back from the ends of each application to start and stop the prime coat on the paper and to ensure that all sprayers will operate at full force on the surface to be treated. Immediately after application remove and destroy the building paper.

3.4.3 Tack Coat

Apply tack coat at the locations shown on the drawings. Apply the tack coat when the surface to be treated is dry. Immediately following the preparation of the surface for treatment, apply the bituminous material by means of the bituminous distributor, within the limits of temperature specified herein and at a rate of not less than 0.05 gallon nor more than 0.15 gallon of diluted emulsion per square yard. Apply the bituminous material so that uniform distribution is obtained over the entire surface to be treated. Treat lightly coated areas and spots missed by the distributor with the bituminous material. Following the

application of bituminous material, allow the surface to cure without being disturbed for period of time necessary to permit setting of the tack coat. Apply the bituminous tack coat only as far in advance of the placing of the overlying layer as required for that day's operation. Maintain and protect the treated surface from damage until the succeeding course of pavement is placed.

3.5 CURING PERIOD

Following application of the bituminous material and prior to application of the succeeding layer of pavement, allow the bituminous coat to cure and to obtain evaporation of any volatiles or moisture. Maintain the coated surface until the succeeding layer of pavement is placed, by protecting the surface against damage and by repairing and recoating deficient areas. Allow the prime coat to cure without being disturbed for a period of at least 48 hours or longer, as may be necessary to attain penetration into the treated course. Furnish and spread enough sand to effectively blot up and cure excess bituminous material.

3.6 FIELD QUALITY CONTROL

Samples of the bituminous material shall be tested for compliance with the applicable specified requirements. A sample shall be obtained and tested by the Contractor for every 1000 gallons of bituminous material used.

3.7 SAMPLING AND TESTING

Perform sampling and testing by an approved commercial testing laboratory or by facilities furnished by the Contractor. No work requiring testing will be permitted until the facilities have been inspected and approved.

3.7.1 Sampling

The samples of bituminous material, unless otherwise specified, shall be in accordance with ASTM D 140 or AASHTO T 40. Sources from which bituminous materials are to be obtained shall be selected and notification furnished the Engineer within 15 days after the award of the contract.

3.7.2 Calibration Test

Furnish all equipment, materials, and labor necessary to calibrate the bituminous distributor. Calibration shall be made with the approved job material and prior to applying the bituminous coat material to the prepared surface. Calibrate the bituminous distributor in accordance with ASTM D 2995.

3.7.3 Trial Applications

Before providing the complete bituminous coat, apply three lengths of at least 100 feet for the full width of the distributor bar to evaluate the amount of bituminous material that can be satisfactorily applied.

3.7.3.1 Tack Coat Trial Application Rate

Unless otherwise authorized, apply the trial application rate of bituminous tack coat materials in the amount of 0.05 gallons per square yard. Other trial applications shall be made using various amounts of material as may be deemed necessary.

3.7.3.2 Prime Coat Trial Application Rate

Unless otherwise authorized, apply the trial application rate of bituminous materials in the amount of 0.25 gallon per square yard. Other trial applications shall be made using various amounts of material as may be deemed necessary.

3.7.4 Sampling and Testing During Construction

Perform quality control sampling and testing as required in paragraph FIELD QUALITY CONTROL.

3.8 TRAFFIC CONTROLS

Keep traffic off surfaces freshly treated with bituminous material. Provide sufficient warning signs and barricades so that traffic will not travel over freshly treated surfaces.

END OF SECTION

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HOT MIX BITUMINOUS PAVEMENT

PART 1 GENERAL

1.1 RELATED DOCUMENTS

The Conditions of the Contract, including the Uniform General and Supplementary General Conditions, Owner's Special Conditions, and Division 1 – General Requirements, apply to work specified in this Section.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

AASHTO MP 1a	(2004) Performance Graded Asphalt Binder

ASPHALT INSTITUTE (AI)

AI MS-02	(6th Edition; 1997) Mix Design Methods for Asphalt

ASTM INTERNATIONAL (ASTM)

ASTM C 117	(2004) Standard Test Method for Materials Finer than 75-um (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 127	(2007) Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate
ASTM C 128	(2007a) Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate
ASTM C 131	(2006) Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C 136	(2006) Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM C 188	(1995; R 2003) Standard Test Method for Density of Hydraulic Cement
ASTM C 29/C 29M	(2007) Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate
ASTM C 88	(2005) Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM D 1073	(2007) Fine Aggregate for Bituminous Paving Mixtures
ASTM D 1188	(2007) Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Paraffin-Coated Specimens

ASTM D 140	(2001; R 2007) Sampling Bituminous Materials
ASTM D 1559	(1989) Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus
ASTM D 2041	(2003a) Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D 2172	(2005) Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
ASTM D 242	(2004) Mineral Filler for Bituminous Paving Mixtures
ASTM D 2726	(2005a) Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
ASTM D 3381	(2005) Viscosity-Graded Asphalt Cement for Use in Pavement Construction
ASTM D 4867/D 4867M	(2004) Effect of Moisture on Asphalt Concrete Paving Mixtures
ASTM D 546	(2005) Sieve Analysis of Mineral Filler for Bituminous Paving Mixtures
ASTM D 692	(2000; R 2004) Coarse Aggregate for Bituminous Paving Mixtures
ASTM D 70	(2008) Specific Gravity and Density of Semi-Solid Bituminous Materials (Pycnometer Method)
ASTM D 75	(2003) Standard Practice for Sampling Aggregates
ASTM D 854	(2006e1) Specific Gravity of Soil Solids by Water Pycnometer
ASTM D 946	(1982; R 2005) Penetration-Graded Asphalt Cement for Use in Pavement Construction
ASTM D 979	(2001; R 2006e1) Sampling Bituminous Paving Mixtures
ASTM D 995	(1995b; R 2002) Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures
Item 340	Texas Department of Transportation (TxDOT)

1.3 SUBMITTALS

The following shall be submitted in accordance with Section 013300 SUBMITTAL PROCEDURES:

Bituminous pavement

SD-05 Design Data

Job-mix formula

Where project involves use of asphalt pavement other than for pavement repairs associated with utility or drainage construction submit a job-mix formula, prepared specifically for this project within one year of submittal for roads, for approval prior to preparing and placing the bituminous mixture. Design mix using procedures contained in TxDOT Item 340. Formulas shall indicate physical properties of the mixes as shown by tests made by a commercial laboratory approved by the Engineer, using materials identical to those to be provided on this project. Job-mix formula for each mixture shall be in effect until modified in writing by the Contractor and approved by the Engineer. Provide a new job-mix formula for each source change. Submittal shall include all tests indicated in MIX DESIGN section of this specification.

ASPHALT CEMENT BINDER

MIX DESIGN

SD-06 Test Reports

Specific gravity test of asphalt

Coarse aggregate tests

Weight of slag test, if used

Percent of crushed pieces in gravel

Fine aggregate tests

Specific gravity of mineral filler

Bituminous mixture tests

Aggregates tests

Bituminous mix tests

1.4 QUALITY ASSURANCE

1.4.1 Safety Requirements

Provide adequate and safe stairways with handrails to the mixer platform, and safe and protected ladders or other means for accessibility to plant operations. Guard equipment and exposed steam or other high temperature lines or cover with a suitable type of insulation.

1.4.2 Mock-Up Test Section – Not Required

1.4.3 Required Data

Job-mix formula shall show the following:

A. Source and proportions, percent by weight, of each ingredient of the mixture;
B. Correct gradation, the percentages passing each size sieve listed in the specifications for the mixture to be used, for the aggregate and mineral filler from each separate source and from each different size to be used in the mixture and for the composite mixture;
C. Amount of material passing the No. 200 sieve determined by dry sieving;
D. Not used;
E. Temperature viscosity relationship of the asphalt cement;
F. Stability, flow, percent voids in mineral aggregate, percent air voids, unit weight;
G. Asphalt absorption by the aggregate;
H. Effective asphalt content as percent by weight of total mix;

I. Temperature of the mixture immediately upon completion of mixing;
J. Asphalt performance grade; and
K. Curves for the leveling binder and wearing courses.

1.4.4 Charts
Plot and submit, on a grain size chart, the specified aggregate gradation band, the job-mix gradation and the job-mix tolerance band.

1.4.5 Selection of Optimum Asphalt Content
Base selection on percent of total mix and the average of values at the following points on the curves for each mix:
A. Stability
B. Unit Weight
C. Percent Air Voids

1.5 DELIVERY, STORAGE, AND HANDLING
Inspect materials delivered to the site for damage and store with a minimum of handling. Store aggregates in such a manner as to prevent segregation, contamination, or intermixing of the different aggregate sizes.

1.6 ENVIRONMENTAL CONDITIONS
Place bituminous mixture only during dry weather and on dry surfaces. Place courses only when the surface temperature of the underlying course is greater than 45°F for course thicknesses greater than one inch and 55°F for course thicknesses one inch or less.

1.7 CONSTRUCTION EQUIPMENT
Calibrated equipment, such as scales, batching equipment, spreaders and similar equipment, shall have been recalibrated by a calibration laboratory approved by the Engineer within 12 months of commencing work.

1.7.1 Paving Equipment

1.7.1.1 Spreading Equipment
Self-propelled electronically controlled type, unless other equipment is authorized by the Engi-neer. Equip spreading equipment of the self-propelled electronically controlled type with hoppers, tamping or vibrating devices, distributing screws, electronically adjustable screeds, and equalizing devices. Capable of spreading hot bituminous mixtures without tearing, shoving, or gouging and to produce a finished surface of specified grade and smoothness. Operate spreaders, when laying mixture, at variable speeds between 5 and 45 feet per minute. Design spreader with a quick and efficient steering device; a forward and reverse traveling speed; and automatic devices to adjust to grade and confine the edges of the mixture to true lines. The use of a spreader that leaves indented areas or other objectionable irregularities in the fresh laid mix during operations is prohibited.

1.7.1.2 Rolling Equipment
Self-propelled pneumatic-tired rollers supplemented by three-wheel and tandem type steel wheel rollers. The number, type and weight of rollers shall be sufficient to compact the mixture to the required density without detrimentally affecting the compacted material. Rollers shall be suitable for rolling hot-mix bituminous pavements and capable of reversing without backlash. Pneumatic-tired rollers shall be capable of being operated both forward and backward without turning on the mat, and without loosening the surface being rolled. Equip rollers with suitable devices and apparatus to keep the rolling surfaces wet and prevent adherence of bituminous mixture. Vibratory rollers especially designed for bituminous concrete compaction may be used provided rollers do not impair stability of pavement structure and underlying layers. Repair depressions in pavement surfaces resulting from use of vibratory rollers. Rollers shall be self-propelled, single or dual vibrating drums, and steel

drive wheels, as applicable; equipped with variable amplitude and separate controls for energy and propulsion.

1.7.1.3 Hand Tampers
Minimum weight of 25 pounds with a tamping face of not more than 50 square inches.

1.7.1.4 Mechanical Hand Tampers
Commercial type, operated by pneumatic pressure or by internal combustion.

PART 2 PRODUCTS

2.1 AGGREGATES
Grade and proportion aggregates and filler so that combined mineral aggregate conforms to specified grading. TxDOT Item 340 shall be referenced for the specification.

2.2 ASPHALT CEMENT BINDER
Asphalt cement binder shall conform to AASHTO MP 1a Performance Grade (PG) 64-22. Test data indicating grade certification shall be provided by the supplier at the time of delivery of each load to the mix plant. Copies of these certifications shall be submitted to the Engineer. The supplier is defined as the last source of any modification to the binder. The Engineer may sample and test the binder at the mix plant at any time before or during mix production. Samples for this verification testing shall be obtained by the Contractor in accordance with ASTM D 140 and in the presence of the Engineer. These samples shall be furnished to the Engineer for the verification testing, which shall be at no cost to the Contractor. Samples of the asphalt cement specified shall be submitted for approval not less than 14 days before start of the test section.

2.3 MIX DESIGN
The Contractor shall develop the mix design. The asphalt mix shall be composed of a mixture of well-graded aggregate, mineral filler if required, and asphalt material. The aggregate fractions shall be sized, handled in separate size groups, and combined in such proportions that the resulting mixture meets the grading requirements of the job mix formula (JMF). No hot-mix asphalt for payment shall be produced until a JMF has been approved. The hot-mix asphalt shall be designed using procedures contained in TxDOT Item 340.

2.3.1 JMF Requirements
The job mix formula shall be submitted in writing by the Contractor for approval at least 14 days prior to the start of the test section and shall include as a minimum:

A. Percent passing each sieve size.
B. Percent of asphalt cement.
C. Percent of each aggregate and mineral filler to be used.
D. Asphalt performance grade.
E. NOT USED
F. Laboratory mixing temperature.
G. Lab compaction temperature.
H. Temperature-viscosity relationship of the asphalt cement.
I. Plot of the combined gradation on the 0.45 power gradation chart, stating the nominal maximum size.
J. Graphical plots of stability, air voids, voids in the mineral aggregate, and unit weight versus asphalt content.
K. Specific gravity and absorption of each aggregate.
L. Percent natural sand.
M. Percent particles with two or more fractured faces (in coarse aggregate).
N. Fine aggregate angularity.
O. Percent flat or elongated particles (in coarse aggregate).

P. Tensile Strength Ratio.
Q. Antistrip agent (if required) and amount.
R. List of all modifiers and amount.
S. Percentage and properties (asphalt content, binder properties, and aggregate properties) of RAP in accordance with paragraph RECYCLED HOT-MIX ASPHALT, if RAP is used.

2.3.2 Adjustments to JMF

The JMF for each mixture shall be in effect until a new formula is approved in writing by the Engineer. Should a change in sources of any materials be made, a new mix design shall be performed and a new JMF approved before the new material is used. The Contractor will be allowed to adjust the JMF within the limits specified below to optimize mix volumetric properties. Adjustments to the JMF shall be limited to plus or minus 3 percent on the 1/2 inch, No. 4, and No. 8 sieves; plus or minus 1.0 percent on the No. 200 sieve; and plus or minus 0.40 percent binder content. If adjustments are needed that exceed these limits, a new mix design shall be developed. Tolerances given above may permit the aggregate grading to be outside the limits shown in TxDOT Item 340; this is acceptable.

2.4 RECYCLED HOT MIX ASPHALT

Recycled HMA shall consist of reclaimed asphalt pavement (RAP), coarse aggregate, fine aggregate, mineral filler, and asphalt cement. The RAP shall be of a consistent gradation and asphalt content and properties. When RAP is fed into the plant, the maximum RAP chunk size shall not exceed 2 inches. The recycled HMA mix shall be designed using procedures contained in TxDOT Item 340. The job mix shall meet the requirements of paragraph MIX DESIGN. The amount of RAP shall be limited to 30 percent.

2.4.1 RAP Aggregates and Asphalt Cement

The blend of aggregates used in the recycled mix shall meet the requirements of paragraph AGGREGATES. The percentage of asphalt in the RAP shall be established for the mixture design according to ASTM D 2172 using the appropriate dust correction procedure.

2.4.2 RAS

No recycled shingles may be used in mix.

2.5 SOURCE QUALITY CONTROL

For asphalt requiring a Job Mix Formula employ a commercial laboratory approved by the Engineer to perform testing. The laboratory used to develop the JMF and the laboratory used to perform all sampling and testing shall meet the requirements of ASTM D 3666. A certification signed by the manager of the laboratory stating that it meets these requirements or clearly listing all deficiencies shall be submitted to the Engineer prior to the start of construction. The certification shall contain as a minimum:

A. Qualifications of personnel; laboratory manager, supervising technician, and testing technicians.
B. A listing of equipment to be used in developing the job mix.
C. A copy of the laboratory's quality control system.
D. Evidence of participation in the AASHTO Materials Reference Laboratory (AMRL) program.

2.5.1 Tests

Perform testing in accordance with the following:

A. Specific Gravity Test of Asphalt: ASTM D 70
B. Coarse Aggregate Tests:
   (1) Bulk Specific Gravity: ASTM C 127
   (2) Abrasion Loss: ASTM C 131
   (3) Soundness Loss: ASTM C 88
C. NOT USED
D. Percent of Crushed Pieces in Gravel: Count by observation and weight
E. Fine Aggregate Tests:

(1) Bulk Specific Gravity: ASTM C 128
(2) Soundness Loss: ASTM C 88

F. Specific Gravity of Mineral Filler: ASTM C 188 or ASTM D 854

G. Bituminous Mixture Tests:
(1) Bulk Specific Gravity: ASTM D 1188 or ASTM D 2726
(2) Theoretical Maximum Specific Gravity: ASTM D 2041
(3) Tensile Strength Ratio: ASTM D 4867/D 4867M

2.5.2 Specimens
NOT USED

PART 3 EXECUTION

3.1 PREPARATION

3.1.1 Preparation of Asphalt Binder Material
The asphalt cement material shall be heated avoiding local overheating and providing a continuous supply of the asphalt material to the mixer at a uniform temperature. The temperature of unmodified asphalts shall be no more than 325°F when added to the aggregates. Modified asphalts shall be no more than 350°F when added to the aggregate.

3.1.2 Preparation of Mineral Aggregates
Store different size aggregate in separate stockpiles so that different sizes will not mix. Stockpile different-sized aggregates in uniform layers by use of a clam shell or other approved method so as to prevent segregation. The use of bulldozers in stockpiling of aggregate or in feeding aggregate to the dryer is prohibited. Feed aggregates into the cold elevator by means of separate mechanical feeders so that aggregates are graded within requirements of the job-mix formulas and tolerances specified. Regulate rates of feed of the aggregates so that moisture content and temperature of aggregates are within tolerances specified herein. Dry and heat aggregates to the temperature necessary to achieve the mixture determined by the job mix formula within the job tolerance specified. Provide adequate dry storage for mineral filler.

3.1.3 Preparation of Bituminous Mixture
Accurately weigh aggregates and dry mineral filler and convey into the mixer in the proportionate amounts of each aggregate size required to meet the job-mix formula. In batch mixing, after aggregates and mineral filler have been introduced into the mixer and mixed for not less than 15 seconds, add asphalt by spraying or other approved methods and continue mixing for a period of not less than 20 seconds, or as long as required to obtain a homogeneous mixture. The time required to add or spray asphalt into the mixer will not be added to the total wet-mixing time provided the operation does not exceed 10 seconds and a homogeneous mixture is obtained. When a continuous mixer is employed, mixing time shall be more than 35 seconds to obtain a homogeneous mixture. Additional mixing time, when required, will be as directed by the Engineer. When mixture is prepared in a twin-pugmill mixer, volume of the aggregates, mineral filler, and asphalt shall not extend above tips of mixer blades when blades are in a vertical position. Overheated and carbonized mixtures, or mixtures that foam or show indication of free moisture, will be rejected. When free moisture is detected in batch or continuous mix plant produced mixtures, waste the mix and withdraw the aggregates in the hot bins immediately and return to the respective stockpiles; for drum-dryer mixer plants, waste the mix, including that in surge or storage bins that is affected by free moisture.

3.1.4 Transportation of Bituminous Mixtures
Transport bituminous material from the mixing plant to the paving site in trucks having tight, clean, smooth beds that have been coated with a minimum amount of concentrated solution of hydrated lime and water or other approved coating to prevent adhesion of the mixture to the truck. Petroleum products will not be permitted for coating truck. If air temperature is less

than 60°F or if haul time is greater than 30 minutes, cover each load with canvas or other approved material of ample size to protect the mixture from the loss of heat. Make deliveries so that the spreading and rolling of all the mixture prepared for one day's run can be completed during daylight, unless adequate approved artificial lighting is provided. Deliver mixture to area to be paved so that the temperature at the time of dumping into the spreader is within the range specified herein. Reject loads that are below minimum temperature, that have crusts of cold unworkable material, or that have been wet excessively by rain. Hauling over freshly laid material is prohibited.

3.1.5 Surface Preparation of Underlying Course

Prior to the laying of the asphalt concrete, clean underlying course of foreign or objectionable matter with power blowers or power brooms, supplemented by hand brooms and other cleaning methods where necessary. During the placement of multiple lifts of bituminous concrete, each succeeding lift of bituminous concrete shall have its underlying lift cleaned and provided with a bituminous tack coat if the time period between the placement of each lift of bituminous concrete exceeds 14 days, or the underlying bituminous concrete has become dirty

3.1.6 Spraying of Contact Surfaces (Tack)

Spray contact surfaces of previously constructed pavement with a thin coat of bituminous materials conforming to TxDOT Item 340. Paint contact surfaces of structures with a thin coat of emulsion or other approved bituminous material prior to placing the bituminous mixture. Tack coat the previously placed primed coats on base courses when surface has become excessively dirty and cannot be cleaned or when primed surface has cured to the extent that it has lost all bonding effect.

3.2 PLACEMENT

3.2.1 Machine Spreading

The range of temperatures of the mixtures at the time of spreading shall be between 250°F and 310°F. Bituminous concrete having temperatures less than minimum spreading temperature when dumped into the spreader will be rejected. Adjust spreader and regulate speed so that the surface of the course is smooth and continuous without tears and pulling, and of such depth that, when compacted, the surface conforms with the cross section, grade, and contour indicated. Unless otherwise directed, begin the placing along the centerline of areas to be paved on a crowned section or on the high side of areas with a one-way slope. Place mixture in consecutive adjacent strips having a minimum width of 10 feet, except where the edge lanes require strips less than 10 feet to complete the area. Construct longitudinal joints and edges to true line markings. Establish lines parallel to the centerline of the area to be paved, and place string lines coinciding with the established lines for the spreading machine to follow. Provide the number and location of the lines needed to accomplish proper grade control. When specified grade and smoothness requirements can be met for initial lane construction by use of an approved long ski-type device of not less than 30 feet in length and for subsequent lane construction by use of a short ski or shoe, in-place string lines for grade control may be omitted. Place mixture as nearly continuous as possible and adjust the speed of placing as needed to permit proper rolling.

3.2.2 Shoveling, Raking, and Tamping After Machine-Spreading

Shovelers and rakers shall follow the spreading machine. Add or remove hot mixture and rake the mixture as required to obtain a course that when completed will conform to requirements specified herein. Broadcasting or fanning of mixture over areas being compacted is prohibited. When segregation occurs in the mixture during placing, suspend spreading operation until the cause is determined and corrected. Correct irregularities in alinement left by the spreader by trimming directly behind the machine. Immediately after trimming, compact edges of the course by tamping laterally with a metal lute or by other approved methods. Distortion of the course during tamping is prohibited.

3.2.3 Hand-Spreading in Lieu of Machine-Spreading

In areas where the use of machine spreading is impractical, spread mixture by hand. The range of temperatures of the mixtures when dumped onto the area to be paved shall be between 250°F and 310°F. Mixtures having temperatures less than minimum spreading temperature when dumped onto the area to be paved will be rejected. Spread hot mixture with rakes in a uniformly loose layer of a thickness that, when compacted, will conform to the required grade, thickness, and smoothness. During hand spreading, place each shovelful of mixture by turning the shovel over in a manner that will prevent segregation. Do not place mixture by throwing or broadcasting from a shovel. Do not dump loads any faster than can be properly handled by the shovelers and rakers.

3.3 COMPACTION OF MIXTURE

Compact mixture by rolling. Begin rolling as soon as placement of mixture will bear rollers. Delays in rolling freshly spread mixture shall not be permitted. Start rolling longitudinally at the extreme sides of the lanes and proceed toward center of pavement, or toward high side of pavement with a one-way slope. Operate rollers so that each trip overlaps the previous adjacent strip by at least one foot. Alternate trips of the roller shall be of slightly different lengths. Conduct tests for conformity with the specified crown, grade and smoothness immediately after initial rolling. Before continuing rolling, correct variations by removing or adding materials as necessary. If required, subject course to diagonal rolling with the steel wheeled roller crossing the lines of the previous rolling while mixture is hot and in a compactible condition. Speed of the rollers shall be slow enough to avoid displacement of hot mixture. Correct displacement of mixture immediately by use of rakes and fresh mixture, or remove and replace mixture as directed. Continue rolling until roller marks are eliminated and course has a density as specified in TxDOT Item 340. During rolling, moisten wheels of the rollers enough to prevent adhesion of mixture to wheels, but excessive water is prohibited. Operation of rollers shall be by competent and experienced operators. Provide sufficient rollers for each spreading machine in operation on the job and to handle plant output. In places not accessible to the rollers, compact mixture thoroughly with hot hand tampers. Skin patching of an area after compaction is prohibited. Remove mixture that becomes mixed with foreign materials or is defective and replace with fresh mixture compacted to the density specified herein. Roller shall pass over unprotected edge of the course only when laying of course is to be discontinued for such length of time as to permit mixture to become cold.

3.4 JOINTS

Joints shall present the same texture and smoothness as other portions of the course, except permissible density at the joint may be up to 2 percent less than the specified course density. Carefully make joints between old and new pavement or within new pavements in a manner to ensure a thorough and continuous bond between old and new sections of the course. Vertical contact surfaces of previously constructed sections that are coated with dust, sand, or other objectionable material shall be painted with a thin uniform coat of emulsion or other approved bituminous material just before placing fresh mixture.

3.4.1 Transverse

Roller shall pass over unprotected end of freshly laid mixture only when laying of course is to be discontinued. Except when an approved bulkhead is used, cut back the edge of previously laid course to expose an even, vertical surface for the full thickness of the course. When required, rake fresh mixture against joints, thoroughly tamp with hot tampers, smooth with hot smoothers, and roll. Transverse joints in adjacent lanes shall be offset a minimum of 2 feet.

3.4.2 Longitudinal Joints

Space 6 inches apart. Do not allow joints to coincide with joints of existing pavement or previously placed courses. Spreader screed shall overlap previously placed lanes 2 to 3 inches and be of such height to permit compaction to produce a smooth dense joint. With a lute,

push back mixture placed on the surface of previous lanes to the joint edge. Do not scatter mix. Remove and waste excess material. When edges of longitudinal joints are irregular, honeycombed, or poorly compacted, cut back unsatisfactory sections of joint and expose an even vertical surface for the full thickness of the course. When required, rake fresh mixture against joint, thoroughly tamp with hot tampers, smooth with hot smoothers, and roll while hot.

3.5 FIELD QUALITY CONTROL – FOR JOB MIX FORMULA ASPHALT

3.5.1 Sampling

3.5.1.1 Aggregates At Source – Not required unless noted on plans
Prior to production and delivery of aggregates, take at least one initial sample in accordance with ASTM D 75 from each stockpile. Collect each sample by taking three incremental samples at random from the source material to make a composite sample of not less than 50 pounds. Repeat the sampling when the material source changes or when testing reveals unacceptable deficiencies or variations from the specified grading of materials.

3.5.1.2 Cold Feed Aggregate Sampling
NOT USED

3.5.1.3 Coarse and Fine Aggregates – Not required unless noted on plans
Take a 50 pound sample from the cold feed at least once daily for sieve analyses and specific gravity tests. Additional samples may be required to perform more frequent tests when analyses show deficiencies, or unacceptable variances or deviations. The method of sampling is as specified herein for aggregates.

3.5.1.4 Mineral Filler – Not required unless noted on plans
ASTM D 546. Take samples large enough to provide ample material for testing.

3.5.1.5 Pavement and Mixture – Not required unless noted on plans.
Take plant samples for the determination of mix properties and field samples for thickness and density of the completed pavements. Furnish tools, labor and material for samples, and satisfactory replacement of pavement. Take samples and tests at not less than frequency specified hereinafter and at the beginning of plant operations; for each day's work as a minimum; each change in the mix or equipment; and as often as directed. Accomplish sampling in accordance with ASTM D 979.

3.5.2 Testing

3.5.2.1 Aggregates Tests – Not required unless noted on plans

A. Gradation: ASTM C 136.
B. Mineral Filler Content: ASTM D 546.
C. Abrasion: ASTM C 131 for wear (Los Angeles test). Perform one test initially prior to incorporation into the work and each time the source is changed.

3.5.2.2 Bituminous Mix Tests – Not required unless noted on plans
Test one sample for each 500 tons, or fraction thereof, of the uncompacted mix for extraction in accordance with ASTM D 2172; perform a sieve analysis on each extraction sample in accordance with ASTM C 136 and ASTM C 117. Test one sample for each 500 tons or fraction thereof for stability in accordance with ASTM D 1559.

3.5.2.3 Pavement Courses – To be performed by Owner's Testing Contractor unless noted otherwise on the plans.
Perform the following tests:

A. Density: For each 500 tons of bituminous mixture placed, determine the representative laboratory density by averaging the density of three laboratory specimens prepared as

specified in TxDOT Item 340. Samples for laboratory specimens shall be taken from trucks delivering mixture to the site; record in a manner approved by the Engineer the project areas represented by the laboratory densities. From each representative area recorded, determine field density of pavement by averaging densities of 4 inch diameter cores obtained from leveling, binder, and wearing courses; take one core for each 2000 square yards or fraction thereof of course placed. Determine density of laboratory prepared specimens and cored samples in accordance with ASTM D 1188 or ASTM D 2726, as applicable. Separate pavement layers by sawing or other approved means. Maximum allowable deficiency at any point, excluding joints, shall not be more than 2 percent less than the specified density for any course. The average density of each course, excluding joints, shall be not less than the specified density. Joint densities shall not be more than 2 percent less than specified course densities and are not included when calculating average course densities. When the deficiency exceeds the specified tolerances, correct each such representative area or areas by removing the deficient pavement and replacing with new pavement.

B. Thickness: Determine thickness of binder and wearing courses from samples taken for the field density test. The maximum allowable deficiency at any point shall not be more than 1/4 inch less than the thickness for the indicated course. Average thickness of course or of combined courses shall be not less than the indicated thickness. Where a deficiency exceeds the specified tolerances, correct each such representative area or areas by removing the deficient pavement and replacing with new pavement.

C. Smoothness: Straightedge test the compacted surface of leveling, binder, and wearing courses as work progresses. Apply straightedge parallel with and at right angles to the centerline after final rolling. Unevenness of leveling and binder courses shall not vary more than 1/4 inch in 10 feet; variations in the wearing course shall not vary more than 1/8 inch in 10 feet. Correct each portion of the pavement showing irregularities greater than that specified.

D. Finished Grades: Finish grades of each course placed shall not vary from the finish elevations, profiles, and cross sections indicated by more than 1/2 inch. Finished surface of the final wearing course will be tested by running lines of levels at intervals of 25 feet longitudinally and transversely to determine elevations of completed pavement. Correct deficient paved areas by removing existing work and replacing with new materials that meet the specifications. Skin patching for correcting low areas is prohibited.

E. Finish Surface Texture of Wearing Course: Visually check final surface texture for uniformity and reasonable compactness and tightness. Final wearing course with a surface texture having undesirable irregularities such as segregation, cavities, pulls or tears, checking, excessive exposure of coarse aggregates, sand streaks, indentations, ripples, or lack of uniformity shall be removed and replaced with new materials.

F. Finish Surface on Track shall meet the tolerances established by the surface installer.

3.6 PROTECTION

Do not permit vehicular traffic, including heavy equipment, on pavement until surface temperature has cooled to at least 120°F. Measure surface temperature by approved surface thermometers or other satisfactory methods.

END OF SECTION

SECTION 32 13 13

PORTLAND CEMENT CONCRETE PAVEMENT

PART 1 GENERAL

1.1 RELATED DOCUMENTS

The Conditions of the Contract, including the Uniform General and Supplementary General Conditions, Owner's Special Conditions, and Division 1 – General Requirements, apply to work specified in this Section.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ACI INTERNATIONAL (ACI)

ACI 211.1	(1991; R 2002) Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete
ACI 301	(2005) Specifications for Structural Concrete
ACI 305R	(1999; Errata 2006) Hot Weather Concreting
ACI 306.1	(1990; R 2002) Standard Specification for Cold Weather Concreting

ASTM INTERNATIONAL (ASTM)

ASTM A 184/A 184M	(2006) Standard Specification for Fabricated Deformed Steel Bar Mats for Concrete Reinforcement
ASTM A 615/A 615M	(2008a) Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM A 775/A 775M	(2007b) Standard Specification for Epoxy-Coated Steel Reinforcing Bars
ASTM A 966/A 966M	(2008) Standard Test Method for Magnetic Particle Examination of Steel Forgings Using Alternating Current
ASTM C 1077	(2007a) Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation
ASTM C 1260	(2007) Standard Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)
ASTM C 143/C 143M	(2008) Standard Test Method for Slump of Hydraulic-Cement Concrete
ASTM C 150	(2007) Standard Specification for Portland Cement
ASTM C 171	(2007) Standard Specification for Sheet Materials for Curing Concrete

ASTM C 172	(2008) Standard Practice for Sampling Freshly Mixed Concrete
ASTM C 231	(2008b) Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C 260	(2006) Standard Specification for Air-Entraining Admixtures for Concrete
ASTM C 309	(2007) Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C 31/C 31M	(2008a) Standard Practice for Making and Curing Concrete Test Specimens in the Field
ASTM C 33	(2007) Standard Specification for Concrete Aggregates
ASTM C 39	(2008) Standard Test Method for Compressive Strength of Cylindrical Specimens
ASTM C 494/C 494M	(2008a) Standard Specification for Chemical Admixtures for Concrete
ASTM C 595	(2008) Standard Specification for Blended Hydraulic Cements
ASTM C 618	(2008) Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
ASTM C 94/C 94M	(2007) Standard Specification for Ready-Mixed Concrete
ASTM C 989	(2006) Standard Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars
ASTM D 6270	(1998; R 2004) Use of Scrap Tires in Civil Engineering Applications

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

FS L-C-530	(Rev C) Coating, Pipe, Thermoplastic Resin

1.3 SUBMITTALS

The following shall be submitted in accordance with Section 013300 SUBMITTAL PROCEDURES:

SD-03 Product Data

Curing materials

Admixtures

Dowel Reinforcement

Submit a complete list of materials including type, brand and applicable reference specifications.

Cementitious Materials

Aggregate

SD-05 Design Data

Concrete mix design – required when noted on plans.

Thirty days minimum prior to concrete placement, submit a mix design, with applicable tests, for each strength and type of concrete for approval. Submit a complete list of materials including type; brand; source and amount of cement, fly ash, slag, and admixtures; and applicable reference specifications. Provide mix proportion data using at least three different water-cement ratios for each type of mixture, which will produce a range of strength encompassing those required for each class and type of concrete required. Submittal shall clearly indicate where each mix design will be used when more than one mix design is submitted. Obtain acknowledgement of approvals prior to concrete placement. Submit a new mix design for each material source change.

SD-06 Test Reports – Required when noted on plans

Aggregate tests

Concrete slump tests

Air content tests

Compressive strength tests

SD-07 Certificates – Required when noted on plans

Ready-mixed concrete plant

Cementitious materials

SD-11 Closeout Submittals

1.4 DELIVERY, STORAGE, AND HANDLING

ASTM C 94/C 94M.

1.5 QUALITY ASSURANCE

1.5.1 Ready-mixed Concrete Plant Certification – required when noted on plans

Provide documentation that the ready-mix plant is certified by the National Ready-Mix Concrete Association (NRMCA).

1.5.2 Required Information

Submit copies of laboratory test reports showing that the mix has been successfully tested to produce concrete with the properties specified and that mix will be suitable for the job conditions. The laboratory test reports shall include mill test and all other test for cementitious materials, aggregates, and admixtures. Provide maximum nominal aggregate size, gradation analysis, percentage retained and passing sieve, and a graph of percentage retained verses sieve size. Test reports shall be submitted along with the concrete mix design. Sampling and testing of materials, concrete mix design, sampling and testing in the field shall be performed by a commercial testing laboratory which conforms to ASTM C 1077.

1.5.3 Batch Tickets – required when noted on plans
ASTM C 94/C 94M. Submit mandatory batch ticket information for each load of ready-mixed concrete.

PART 2 PRODUCTS

2.1 MATERIALS – TESTS REQUIRED WHEN NOTED ON PLANS

2.1.1 Cementitous Materials
Provide test data demonstrating compatibility and performance of concrete satisfactory to Engineer.

2.1.1.1 Cement
ASTM C 150, Type I or II, with maximum alkali content of 0.60%. Cement certificate shall include test results in accordance with ASTM C 150, including equivalent alkalies indicated in the Supplementary Optional Chemical Requirements.

2.1.1.2 Fly Ash and Pozzolan
ASTM C 618, Type F, except that the maximum allowable loss on ignition shall be 6%, maximum available alkalies content shall be 1.5%, and maximum calcium oxide (CaO) content 8%. Fly ash certificates shall include test results in accordance with ASTM C 618, including available alkalies indicated in the Supplementary Optional Chemical Requirements. Fly ash shall not comprise more than twenty percent of the cementitous material

2.1.2 Water
ASTM C 94/C 94M, fresh, clean, and potable.

2.1.3 Aggregate

2.1.3.1 Alkali Reactivity Test
Aggregates to be used in all concrete shall be evaluated and tested by the Contractor for alkali-aggregate reactivity in accordance with ASTM C 1260. The types of aggregates shall be evaluated in a combination which matches the contractors' proposed mix design (including Class F fly ash), utilizing the modified version of ASTM C 1260. Test results of the combination shall have a measured expansion of less than 0.08 percent at 16 days. Should the test data indicate an expansion of greater than 0.08%, the aggregate(s) shall be rejected and the contractor shall submit new aggregate sources for retesting or may submit additional test results incorporating Lithium Nitrate for consideration.

ASTM C 1260 shall be modified as follows to include one of the following options:

Utilize the contractor's proposed low alkali Portland cement and Class F fly ash in combination for the test proportioning. The laboratory shall use the contractor's proposed percentage of cement and fly ash.

2.1.3.2 Fine Aggregates
ASTM C 33.

2.1.3.3 Coarse Aggregates
ASTM C 33.

2.1.4 Admixtures
ASTM C 494/C 494M: Type A, water reducing; Type B, retarding; Type C, accelerating; Type D, water-reducing and retarding; and Type E, water-reducing and accelerating admixture. Do not use calcium chloride admixtures. Where not shown or specified, the use of admixtures is subject to written approval of the Engineer.

ASTM C 260: Air-entraining.

2.1.5 Reinforcement

2.1.5.1 Dowel Bars
Bars shall conform to ASTM A 615/A 615M, Grade 40 for plain billet-steel bars of the size and length indicated. Remove all burrs and projections from the bars.

2.1.5.2 Coated Dowel Bars
Bars shall conform to ASTM A 615/A 615M, Grade 40 for plain billet-steel bars of the size and length indicated. Remove all burrs or projections from the dowel bars. Coating system shall conform to FS L-C-530, Type 2. Coat the bars with a double coat system or an epoxy coating system for resistance to penetration of oil and salt solutions. The systems shall be in accordance with manufacturer's recommendation for coatings which are not bondable to concrete. Bond the coating to the dowel bar to resist laps or folds during movement of the joint. Coating thickness shall be 7 mils minimum and 20 mils maximum.

2.1.5.3 Tie Bars
Bars shall be billet or axle steel deformed bars and conform to ASTM A 615/A 615M or ASTM A 966/A 966M Grade 40.

2.1.5.4 Reinforcement
Deformed steel bar mats shall conform to ASTM A 184/A 184M. Bar reinforcement shall conform to ASTM A 615/A 615M, Grade 40.

2.1.6 Curing Materials

2.1.6.1 White-Burlap-Polyethylene Sheet
ASTM C 171, 0.004 inch thick white opaque polyethylene bonded to 10 oz/linear yard (40 inch) wide burlap.

2.1.6.2 Liquid Membrane-Forming Compound
ASTM C 309, white pigmented, Type 2, Class B, free of paraffin or petroleum.

2.1.7 Joint Fillers and Sealants
New joints shall match existing alignment.

2.2 CONCRETE PAVEMENT

2.2.1 Albedo
NOT USED

2.2.2 Permeability
NOT USED

2.3 CONTRACTOR-FURNISHED MIX DESIGN

Contractor-furnished mix design concrete shall be designed in accordance with ACI 211.1 except as modified herein, and the mix design shall be as specified herein under paragraph entitled "Submittals." The concrete shall have a minimum compressive strength of 3,000 pounds per square inch at 28 days unless otherwise stated in the plans. The concrete may be air entrained. If air entrainment is used the air content shall be 5.0 plus or minus 1.5 percent. Maximum size aggregate for slip forming shall be 1.5 inches. The minimum cementitious factor is 564 lbs per cubic yard and slump shall be 1 to 3 inches (or less when slip form is used.

If the cementitious material is not sufficient to produce concrete of the flexural strength required it shall be increased as necessary, without additional compensation under the contract. The cementitious factor shall be calculated using cement and Class F fly ash.

PART 3 EXECUTION

3.1 PREPARATION FOR PERVIOUS SYSTEMS

NOT USED

3.2 FORMS

3.2.1 Construction

Construct forms to be removable without damaging the concrete.

3.2.2 Coating

Before placing the concrete, coat the contact surfaces of forms, except existing pavement sections where bonding is required, with a non-staining mineral oil, non-staining form coating compound, or two coats of nitro-cellulose lacquer. When using existing pavement as a form, clean existing concrete and then coat with asphalt emulsion bond breaker before concrete is placed.

3.2.3 Grade and Alignment

Check and correct grade elevations and alignment of the forms immediately before placing the concrete.

3.3 REINFORCEMENT

3.3.1 Dowel Bars

Install bars accurately aligned, vertically and horizontally, at indicated locations and to the dimensions and tolerances indicated. Before installation thoroughly grease the sliding portion of each dowel. Dowels must remain in position during concrete placement and curing.

3.3.2 Coated Dowel Bars

Install bars, accurately aligned vertically and horizontally, at indicated locations and to the dimensions and tolerances indicated. Reject coatings which are perforated, cracked or otherwise damaged. While handling avoid scuffing or gouging of the coatings.

3.3.3 Tie Bars

Install bars, accurately aligned horizontally and vertically, at indicated locations. For slipform construction, insert bent tie bars by hand or other approved means.

3.3.4 Setting Slab Reinforcement

Reinforcement shall be positioned on suitable chairs prior to concrete placement. At expansion, contraction and construction joints, place the reinforcement as indicated. Reinforcement, when placed in concrete, shall be free of mud, oil, scale or other foreign materials. Place reinforcement accurately and wire securely. The laps at splices shall be 12 inches minimum and the distances from ends and sides of slabs and joints shall be as indicated.

3.4 MEASURING, MIXING, CONVEYING, AND PLACING CONCRETE

3.4.1 Measuring

ASTM C 94/C 94M.

3.4.2 Mixing

ASTM C 94/C 94M, except as modified herein. Begin mixing within 30 minutes after cement has been added to aggregates. When the air temperature is greater than 85°F, reduce mixing time and place concrete within 60 minutes. Additional water may be added to bring slump

within required limits as specified in Section 11.7 of ASTM C 94/C 94M, provided that the specified water-cement ratio is not exceeded.

3.4.3 Conveying
ASTM C 94/C 94M.

3.4.4 Placing
Follow guidance of ACI 301, except as modified herein. Do not exceed a free vertical drop of 3 feet from the point of discharge. Place concrete continuously at a uniform rate, with minimum amount of segregation, without damage to the grade and without unscheduled stops except for equipment failure or other emergencies. If this occurs within 10 feet of a previously placed expansion joint, remove concrete back to joint, repair any damage to grade, install a construction joint and continue placing concrete only after cause of the stop has been corrected.

3.4.5 Vibration
Immediately after spreading concrete, consolidate concrete with internal type vibrating equipment along the boundaries of all slabs regardless of slab thickness, and interior of all concrete slabs 6 inches or more in thickness. Limit duration of vibration to that necessary to produce consolidation of concrete. Excessive vibration will not be permitted. Vibrators shall not be operated in concrete at one location for more than 15 seconds. At the option of the Contractor, vibrating equipment of a type approved by the Engineer may be used to consolidate concrete in unreinforced pavement slabs less than 6 inches thick.

3.4.5.1 Vibrating Equipment
Operate equipment, except hand-manipulated equipment, ahead of the finishing machine. Select the number of vibrating units and power of each unit to properly consolidate the concrete. Mount units on a frame that is capable of vertical movement and, when necessary, radial movement, so vibrators may be operated at any desired depth within the slab or be completely withdrawn from the concrete. Clear distance between frame-mounted vibrating units that have spuds that extend into the slab at intervals across the paving lane shall not exceed 30 inches. Distance between end of vibrating tube and side form shall not exceed 2 inches. For pavements less than 10 inches thick, operate vibrators at mid-depth parallel with or at a slight angle to the subbase. For thicker pavements, angle vibrators toward the vertical, with vibrator tip preferably about 2 inches from subbase, and top of vibrator a few inches below pavement surface. Vibrators may be pneumatic, gas driven, or electric, and shall be operated at frequencies within the concrete of not less than 8,000 vibrations per minute. Amplitude of vibration shall be such that noticeable vibrations occur at 1.5 foot radius when the vibrator is inserted in the concrete to the depth specified.

3.4.6 Cold Weather
Except with authorization, do not place concrete when ambient temperature is below 40°F or when concrete is likely to be subjected to freezing temperatures within 24 hours. When authorized, when concrete is likely to be subjected to freezing within 24 hours after placing, heat concrete materials so that temperature of concrete when deposited is between 65° and 80°F. Methods of heating materials are subject to approval of the Engineer. Do not heat mixing water above 165°F. Remove lumps of frozen material and ice from aggregates before placing aggregates in mixer. Follow practices found in ACI 306.1.

3.4.7 Hot Weather
Maintain required concrete temperature in accordance with Figure 2.1.5 in ACI 305R to prevent evaporation rate from exceeding 0.2 pound of water per square foot of exposed concrete per hour. Cool ingredients before mixing or use other suitable means to control concrete temperature and prevent rapid drying of newly placed concrete. After placement, use fog spray, apply monomolecular film, or use other suitable means to reduce the evaporation rate. Start curing when surface of fresh concrete is sufficiently hard to permit curing without damage.

Cool underlying material by sprinkling lightly with water before placing concrete. Follow practices found in ACI 305R.

3.5 PAVING

Install surface elevation of the paving system 1/8 to 1/4 inch above adjacent drainage inlets, concrete collars, or channels. Manufacturer's recommendations shall take precedence over the specifications in the event of conflicting requirements between the two. Pavement shall be constructed with paving and finishing equipment utilizing fixed forms or slipforms.

3.5.1 Consolidation

The paver vibrators shall be inserted into the concrete not closer to the underlying material than 2 inches. The vibrators or any tamping units in front of the paver shall be automatically controlled so that they shall be stopped immediately as forward motion ceases. Excessive vibration shall not be permitted. Concrete in small, odd-shaped slabs or in locations inaccessible to the paver mounted vibration equipment shall be vibrated with a hand-operated immersion vibrator. Vibrators shall not be used to transport or spread the concrete.

3.5.2 Operation

When the paver is operated between or adjacent to previously constructed pavement (fill-in lanes), provisions shall be made to prevent damage to the previously constructed pavement, including keeping the existing pavement surface free of any debris, and placing rubber mats beneath the paver tracks. Transversely oscillating screeds and extrusion plates shall overlap the existing pavement the minimum possible, but in no case more than 8 inches.

3.5.3 Required Results

The paver-finisher shall be operated to produce a thoroughly consolidated slab throughout, true to line and grade within specified tolerances. The paver-finishing operation shall produce a surface finish free of irregularities, tears, voids of any kind, and any other discontinuities. It shall produce only a very minimum of paste at the surface. Multiple passes of the paver-finisher shall not be permitted. The equipment and its operation shall produce a finished surface requiring no hand finishing, other than the use of cutting straightedges, except in very infrequent instances. No water, other than true fog sprays (mist), shall be applied to the concrete surface during paving and finishing.

3.5.4 Fixed Form Paving

Forms shall be steel, except that wood forms may be used for curves having a radius of 150 feet or less, and for fillets. Forms may be built up with metal or wood, added only to the base, to provide an increase in depth of not more than 25 percent. The base width of the form shall be not less than eight-tenths of the vertical height of the form, except that forms 8 inches or less in vertical height shall have a base width not less than the vertical height of the form. Wood forms for curves and fillets shall be adequate in strength and rigidly braced. Forms shall be set on firm material cut true to grade so that each form section when placed will be firmly in contact with the underlying layer for its entire base. Forms shall not be set on blocks or on built-up spots of underlying material. Forms for overlay pavements and for other locations where forms must be set on existing pavements shall be held securely in place with stakes or by other approved methods. Holes in existing pavements for form stakes shall be carefully drilled without cracking or spalling the existing pavement. Prior to setting forms for paving operations, the Contractor shall demonstrate the proposed form setting procedures at an approved location and shall not proceed further until the proposed method is approved. Forms shall remain in place at least 12 hours after the concrete has been placed. Forms shall be removed without injuring the concrete.

3.5.5 Slipform Paving

The slipform paver shall shape the concrete to the specified and indicated cross section in one pass, and shall finish the surface and edges so that only a very minimum amount of hand finishing is required. Dowels shall not be installed by dowel inserters attached to the paver or

by any other means of inserting the dowels into the plastic concrete. If a keyway is required, a 26 gauge thick metal keyway liner shall be installed as the keyway is extruded. The keyway liner shall be protected and shall remain in place and become part of the joint.

3.5.6 Placing Reinforcing Steel

Reinforcement shall be positioned on suitable chairs securely fastened to the subgrade prior to concrete placement. If reinforcing for Continuously Reinforced Concrete Pavement (CRCP) is required, the entire operating procedure and equipment proposed shall be submitted for approval at least 30 days prior to proposed start of paving.

3.5.7 Placing Dowels and Tie Bars

Dowels shall be installed with alignment not greater than 1/8 inch per ft. Except as otherwise specified below, location of dowels shall be within a horizontal tolerance of plus or minus 5/8 inch and a vertical tolerance of plus or minus 3/16 inch. The portion of each dowel intended to move within the concrete or expansion cap shall be painted with one coat of rust inhibiting primer paint, and then oiled just prior to placement. Dowels in joints shall be omitted when the center of the dowel is located within a horizontal distance from an intersecting joint equal to or less than one-fourth of the slab thickness.

3.5.7.1 Contraction Joints

Dowels in longitudinal and transverse contraction joints within the paving lane shall be held securely in place by means of rigid metal basket assemblies. The dowels shall be welded to the assembly or held firmly by mechanical locking arrangements that will prevent them from becoming distorted during paving operations. The basket assemblies shall be held securely in the proper location by means of suitable anchors.

3.5.7.2 Construction Joints-Fixed Form Paving

Installation of dowels shall be by the bonded-in-place method, supported by means of devices fastened to the forms. Installation by removing and replacing in preformed holes will not be permitted.

3.5.7.3 Dowels Installed in Hardened Concrete

Installation shall be by bonding the dowels into holes drilled into the hardened concrete. Holes approximately 1/8 inch greater in diameter than the dowels shall be drilled into the hardened concrete. Dowels shall be bonded in the drilled holes using epoxy resin injected at the back of the hole before installing the dowel and extruded to the collar during insertion of the dowel so as to completely fill the void around the dowel. Application by buttering the dowel shall not be permitted. The dowels shall be held in alignment at the collar of the hole, after insertion and before the grout hardens, by means of a suitable metal or plastic collar fitted around the dowel. The vertical alignment of the dowels shall be checked by placing the straightedge on the surface of the pavement over the top of the dowel and measuring the vertical distance between the straightedge and the beginning and ending point of the exposed part of the dowel. Where tie bars are required in longitudinal construction joints of slipform pavement, bent tie bars shall be installed at the paver, in front of the transverse screed or extrusion plate. If tie bars are required, a standard keyway shall be constructed, and the bent tie bars shall be inserted into the plastic concrete through a 26 gauge thick metal keyway liner. Tie bars shall not be installed in preformed holes. The keyway liner shall be protected and shall remain in place and become part of the joint. Before placement of the adjoining paving lane, the tie bars shall be straightened, without spalling the concrete around the bar.

3.5.7.4 Expansion Joints

Dowels in expansion joints shall be installed by the bonded-in-place method or by bonding into holes drilled in hardened concrete, using procedures specified above.

3.6 FINISHING CONCRETE

Start finishing operations immediately after placement of concrete. Use finishing machine, except hand finishing may be used in emergencies and for concrete slabs in inaccessible locations or of such shapes or sizes that machine finishing is impracticable. Finish pavement surface on both sides of a joint to the same grade. Finish formed joints from a securely supported transverse bridge. Provide hand finishing equipment for use at all times. Transverse and longitudinal surface tolerances shall be 1/4 inch in 10 feet.

3.6.1 Side Form Finishing

Strike off and screed concrete to the required [crown] [slope] and cross-section by a power-driven transverse finishing machine. Transverse rotating tube or pipe shall not be permitted unless approved by the Engineer. Elevation of concrete shall be such that, when consolidated and finished, pavement surface will be adequately consolidated and at the required grade. Equip finishing machine with two screeds which are readily and accurately adjustable for changes in pavement slope and compensation for wear and other causes. Make as many passes over each area of pavement and at such intervals as necessary to give proper compaction, retention of coarse aggregate near the finished surface, and a surface of uniform texture, true to grade and slope. Do not permit excessive operation over an area, which will result in an excess of mortar and water being brought to the surface.

3.6.1.1 Equipment Operation

Maintain the travel of machine on the forms without lifting, wobbling, or other variation of the machine which tend to affect the precision of concrete finish. Keep the tops of the forms clean by a device attached to the machine. During the first pass of the finishing machine, maintain a uniform ridge of concrete ahead of the front screed for its entire length.

3.6.1.2 Joint Finish

Before concrete is hardened, correct edge slump of pavement, exclusive of edge rounding, in excess of 0.02 foot. Finish concrete surface on each side of construction joints to the same plane, and correct deviations before newly placed concrete has hardened.

3.6.1.3 Hand Finishing

Strike-off and screed surface of concrete to elevations slightly above finish grade so that when concrete is consolidated and finished pavement surface is at the indicated elevation. Vibrate entire surface until required compaction and reduction of surface voids is secured with a strike-off template.

3.6.1.4 Longitudinal Floating

After initial finishing, further smooth and consolidate concrete by means of hand-operated longitudinal floats. Use floats that are not less than 12 feet long and 6 inches wide and stiffened to prevent flexing and warping.

3.6.2 Texturing

Before the surface sheen has disappeared and before the concrete hardens, the surface of the pavement shall be given a texture as described herein. Following initial texturing on the first day of placement, the Placing Foreman and Engineer representative shall inspect the texturing for compliance with design requirements. After curing is complete, all textured surfaces shall be thoroughly power broomed to remove all debris. Any type of transverse texturing shall produce grooves in straight lines across each lane within a tolerance of ± 1/2 inch of a true line. The concrete in areas of recesses for tie-down anchors, lighting fixtures, and other outlets in the pavement shall be finished to provide a surface of the same texture as the surrounding area.

3.6.2.1 Burlap Drag Finish

Before concrete becomes non-plastic, finish the surface of the slab by dragging on the surface a strip of clean, wet burlap measuring from 3 to 10 feet long and 2 feet wider than the width of

the pavement. Select dimension of burlap drag so that at least 3 feet of the material is in contact with the pavement. Drag the surface so as to produce a finished surface with a fine granular or sandy texture without leaving disfiguring marks.

3.6.2.2 Brooming

Finish the surface of the slab by brooming the surface with a new wire broom at least 18 inches wide. Gently pull the broom over the surface of the pavement from edge to edge just before the concrete becomes non-plastic. Slightly overlap adjacent strokes of the broom. Broom perpendicular to centerline of pavement so that corrugations produced will be uniform in character and width, and not more than 1/16 inch in depth. Broomed surface shall be free from porous spots, irregularities, depressions, and small pockets or rough spots such as may be caused by accidentally disturbing particles of coarse aggregate embedded near the surface.

3.6.2.3 Wire-Comb Texturing

Surface texture transverse to the pavement center line shall be applied using a mechanical wire comb drag. The comb shall be capable of traversing the full width of the pavement in a single pass at a uniform speed and with a uniform pressure. Successive passes of the comb shall be overlapped the minimum necessary to obtain a continuous and uniformly textured surface. The scores shall be 1/16 to 3/16 inch deep, 1/16 to 1/8 inch wide, and spaced 3/8 inch apart.

3.6.2.4 Surface Grooving

The areas indicated on the drawings shall be grooved with a spring tine drag producing individual grooves 1/4 inch deep and 1/4 inch wide at a spacing between groove centerlines of 2 inches. These grooves shall be cut perpendicular to the centerline. Before grooving begins, the concrete shall be allowed to stiffen sufficiently to prevent dislodging of aggregate. Grooves shall not be cut within 6 inches of a transverse joint or crack.

3.6.3 Edging

At the time the concrete has attained a degree of hardness suitable for edging, carefully finish slab edges, including edges at formed joints, with an edge having a maximum radius of one-eighth inch. When brooming is specified for the final surface finish, edge transverse joints before starting brooming, then operate broom to obliterate as much as possible the mark left by the edging tool without disturbing the rounded corner left by the edger. Clean by removing loose fragments and soupy mortar from corners or edges of slabs which have crumbled and areas which lack sufficient mortar for proper finishing. Refill voids solidly with a mixture of suitable proportions and consistency and refinish. Remove unnecessary tool marks and edges. Remaining edges shall be smooth and true to line.

3.6.4 Repair of Surface Defects

Follow guidance of ACI 301.

3.7 CURING AND PROTECTION

Protect concrete adequately from injurious action by sun, rain, flowing water, frost, mechanical injury, tire marks and oil stains, and do not allow it to dry out from the time it is placed until the expiration of the minimum curing periods specified herein. Use White-Burlap-Polyethylene Sheet or liquid membrane-forming compound, except as specified otherwise herein. Do not use membrane-forming compound on surfaces where its appearance would be objectionable, on surfaces to be painted, where coverings are to be bonded to concrete, or on concrete to which other concrete is to be bonded. Maintain temperature of air next to concrete above 40 degrees F for the full curing periods.

3.7.1 White-Burlap-Polyethylene Sheet

Wet entire exposed surface thoroughly with a fine spray of water, saturate burlap but do not have excessive water dripping off the burlap and then cover concrete with White-Burlap-Polyethylene Sheet, burlap side down. Lay sheets directly on concrete surface and overlap 12

inches. Make sheeting not less than 18 inches wider than concrete surface to be cured, and weight down on the edges and over the transverse laps to form closed joints. Repair or replace sheets when damaged during curing. Check daily to assure burlap has not lost all moisture. If moisture evaporates, resaturate burlap and re-place on pavement (re-saturation and re-placing shall take no longer than 10 minutes per sheet). Leave sheeting on concrete surface to be cured for at least 7 days.

3.7.2 Liquid Membrane-Forming Compound Curing

Apply compound immediately after surface loses its water sheen and has a dull appearance and before joints are sawed. Agitate curing compound thoroughly by mechanical means during use and apply uniformly in a two-coat continuous operation by suitable power-spraying equipment. Total coverage for the two coats shall be at least one gallon of undiluted compound per 200 square feet. Compound shall form a uniform, continuous, coherent film that will not check, crack, or peel and shall be free from pinholes or other imperfections. Apply an additional coat of compound immediately to areas where film is defective. Respray concrete surfaces that are subject to heavy rainfall within 3 hours after curing compound has been applied in the same manner.

3.7.2.1 Protection of Treated Surfaces

Keep concrete surfaces to which liquid membrane-forming compounds have been applied free from vehicular traffic and other sources of abrasion for not less than 72 hours. Foot traffic is allowed after 24 hours for inspection purposes. Maintain continuity of coating for entire curing period and repair damage to coating immediately.

3.8 FIELD QUALITY CONTROL

3.8.1 Sampling

The Owner’s approved laboratory mayl collect samples of fresh concrete in accordance with ASTM C 172 during each working day as required to perform tests specified herein.

3.8.2 Consistency Tests

The Owner's approved laboratory may perform concrete slump tests in accordance with ASTM C 143/C 143M. Take samples for slump determination from concrete during placement. Perform tests at the beginning of a concrete placement operation and end for each batch (minimum) or every 50 cubic yards (maximum) of concrete to ensure that specification requirements are met. In addition, perform tests each time test beams and cylinders are made.

3.8.3 Compressive Strength Tests

The Owner's approved laboratory may test for compressive strength in accordance with ASTM C 39. Concrete strength will be considered satisfactory when the minimum of the 28-day test results equals or exceeds the specified 28-day compressive strength, and no individual strength test is less than 500 pounds per square inch. If the ratio of the 7-day strength test to the specified 28-day strength is less than 70 percent, make necessary adjustments for conformance. Frequency of flexural tests on concrete beams shall be not less than four test cylinders for each 50 cubic yards of concrete, or fraction thereof, placed. Concrete which is determined to be defective, based on the strength acceptance criteria therein, shall be removed and replaced with acceptable concrete.

3.8.4 Air Content Tests

Test air-entrained concrete for air content at the same frequency as specified for slump tests. Determine percentage of air in accordance with ASTM C 231 on samples taken during placement of concrete in forms.

3.8.5 Surface Testing

Surface testing for surface smoothness and plan grade may be performed as indicated below by the Owner’s Testing Laboratory. The measurements shall be properly referenced in accordance with paving lane identification and stationing, and a report given to the Engineer. A

final report of surface testing, signed by a Registered Engineer, containing all surface measurements and a description of all actions taken to correct deficiencies, shall be provided to the Engineer upon conclusion of surface testing.

3.8.5.1 Surface Smoothness Requirements
The finished surfaces of the pavements shall have no abrupt change of 1/8 inch or more, and all pavements shall be within the tolerances specified when checked with a 12 foot straightedge: 1/5 inch longitudinal and 1/4 inch transverse directions for roads and streets and 1/4 inch for both directions for other concrete surfaces, such as parking areas.

3.8.5.2 Surface Smoothness Testing Method
The surface of the pavement may be tested with the straightedge to identify all surface irregularities exceeding the tolerances specified above. The entire area of the pavement shall be tested in both a longitudinal and a transverse direction on parallel lines approximately 15 feet apart. The straightedge shall be held in contact with the surface and moved ahead one-half the length of the straightedge for each successive measurement. The amount of surface irregularity shall be determined by placing the straightedge on the pavement surface and allowing it to rest upon the two highest spots covered by its length and measuring the maximum gap between the straightedge and the pavement surface, in the area between these two high points.

3.8.6 Plan Grade Testing and Conformance
The surfaces shall vary not more than 0.02 foot above or below the plan grade line or elevation indicated. Each pavement category shall be checked by the Contractor for conformance with plan grade requirements by running lines of levels at intervals to determine the elevation at each joint intersection.

3.8.7 Test for Pavement Thickness
Measure during concrete placement to determine in-place thickness of concrete pavement.

3.8.8 Reinforcement
Inspect reinforcement prior to installation to assure it is free of loose flaky rust, loose scale, oil, mud, or other objectionable material.

3.8.9 Dowels
Inspect dowel placement prior to placing concrete to assure that dowels are of the size indicated, and are spaced, aligned and painted and oiled as specified. Dowels shall not deviate from vertical or horizontal alignment after concrete has been placed by more than 1/8 inch per foot.

END OF SECTION

SECTION 32 16 13

CONCRETE SIDEWALKS AND CURBS AND GUTTERS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

The Conditions of the Contract, including the Uniform General and Supplementary General Conditions, Owner's Special Conditions, and Division 1 – General Requirements, apply to work specified in this Section.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

AASHTO M 182	(2005) Standard Specification for Burlap Cloth Made from Jute or Kenaf and Cotton Mats

ASTM INTERNATIONAL (ASTM)

ASTM A 185/A 185M	(2007) Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete
ASTM A 615/A 615M	(2008) Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM C 143/C 143M	(2008) Standard Test Method for Slump of Hydraulic-Cement Concrete
ASTM C 171	(2007) Standard Specification for Sheet Materials for Curing Concrete
ASTM C 172	(2007a) Standard Practice for Sampling Freshly Mixed Concrete
ASTM C 173/C 173M	(2008) Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method
ASTM C 231	(2008) Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C 309	(2007) Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C 31/C 31M	(2008) Standard Practice for Making and Curing Concrete Test Specimens in the Field
ASTM C 920	(2005) Standard Specification for Elastomeric Joint Sealants
ASTM D 1751	(2004) Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)

ASTM D 1752	(2004a) Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion
ASTM D 5893	(2004) Cold Applied, Single Component, Chemically Curing Silicone Joint Sealant for Portland Cement Concrete Pavements

1.3 SYSTEM DESCRIPTION

1.3.1 General Requirements

Provide plant, equipment, machines, and tools used in the work subject to approval and maintained in a satisfactory working condition at all times. The equipment shall have the capability of producing the required product, meeting grade controls, thickness control and smoothness requirements as specified. Use of the equipment shall be discontinued if it produces unsatisfactory results. The Engineer shall have access at all times to the plant and equipment to ensure proper operation and compliance with specifications.

1.3.2 Slip Form Equipment

Slip form paver or curb forming machine, will be approved based on trial use on the job and shall be self-propelled, automatically controlled, crawler mounted, and capable of spreading, consolidating, and shaping the plastic concrete to the desired cross section in 1 pass.

1.4 SUBMITTALS

Submit the following in accordance with Section 013300 SUBMITTAL PROCEDURES:

SD-03 Product Data

Concrete

Copies of certified delivery tickets for all concrete used in the construction.

SD-06 Test Reports

Field Quality Control

Copies of all test reports within 48 hours of completion of the test.

1.5 ENVIRONMENTAL REQUIREMENTS

1.5.1 Placing During Cold Weather

Do not place concrete when the air temperature reaches 40°F and is falling, or is already below that point. Placement may begin when the air temperature reaches 35°F and is rising, or is already above 40°F. Make provisions to protect the concrete from freezing during the specified curing period. If necessary to place concrete when the temperature of the air, aggregates, or water is below 35°F, placement and protection shall be approved in writing. Approval will be contingent upon full conformance with the following provisions. The underlying material shall be prepared and protected so that it is entirely free of frost when the concrete is deposited. Mixing water and aggregates shall be heated as necessary to result in the temperature of the in-place concrete being between 50° and 85°F. Methods and equipment for heating shall be approved. The aggregates shall be free of ice, snow, and frozen lumps before entering the mixer. Covering and other means shall be provided for maintaining the concrete at a temperature of at least 50°F for not less than 72 hours after placing, and at a temperature above freezing for the remainder of the curing period.

1.5.2 Placing During Warm Weather

The temperature of the concrete as placed shall not exceed 85°F except where an approved retarder is used. The mixing water and/or aggregates shall be cooled, if necessary, to maintain a satisfactory placing temperature. The placing temperature shall not exceed 95°F at any time.

PART 2 PRODUCTS

2.1 CONCRETE

Provide concrete conforming to the applicable requirements of Section 033000 CAST-IN-PLACE CONCRETE except as otherwise specified. Concrete shall have a minimum compressive strength of 3500 psi at 28 days. Maximum size of aggregate shall be 1-1/2 inches.

2.1.1 Air Content

Mixtures shall have air content by volume of concrete of 5 to 7 percent, based on measurements made immediately after discharge from the mixer.

2.1.2 Slump

The concrete slump shall be 2 inches plus or minus 1 inch where determined in accordance with ASTM C 143/C 143M.

2.1.3 Reinforcement Steel

Reinforcement bars shall conform to ASTM A 615/A 615M. Wire mesh reinforcement shall conform to ASTM A 185/A 185M.

2.2 CONCRETE CURING MATERIALS

2.2.1 Impervious Sheet Materials

Impervious sheet materials shall conform to ASTM C 171, type optional, except that polyethylene film, if used, shall be white opaque.

2.2.2 Burlap

Burlap shall conform to AASHTO M 182.

2.2.3 White Pigmented Membrane-Forming Curing Compound

White pigmented membrane-forming curing compound shall conform to ASTM C 309, Type 2.

2.3 CONCRETE PROTECTION MATERIALS

Concrete protection materials shall be a linseed oil mixture of equal parts, by volume, of linseed oil and either mineral spirits, naphtha, or turpentine. At the option of the Contractor, commercially prepared linseed oil mixtures, formulated specifically for application to concrete to provide protection against the action of deicing chemicals may be used, except that emulsified mixtures are not acceptable.

2.4 JOINT FILLER STRIPS

2.4.1 Contraction Joint Filler for Curb and Gutter

Contraction joint filler for curb and gutter shall consist of hard-pressed fiberboard.

2.4.2 Expansion Joint Filler, Premolded

Expansion joint filler, premolded, shall conform to ASTM D 1751 or ASTM D 1752, 1/2 inch thick, unless otherwise indicated.

2.5 JOINT SEALANTS

Joint sealant, cold-applied shall conform to ASTM C 920 or ASTM D 5893.

2.6 FORM WORK

Design and construct form work to ensure that the finished concrete will conform accurately to the indicated dimensions, lines, and elevations, and within the tolerances specified. Forms shall be of wood or steel, straight, of sufficient strength to resist springing during depositing and consolidating concrete. Wood forms shall be surfaced plank, 2 inches nominal thickness, straight and free from warp, twist, loose knots, splits or other defects. Wood forms shall have a

nominal length of 10 feet. Radius bends may be formed with 3/4 inch boards, laminated to the required thickness. Steel forms shall be channel-formed sections with a flat top surface and with welded braces at each end and at not less than two intermediate points. Ends of steel forms shall be interlocking and self-aligning. Steel forms shall include flexible forms for radius forming, corner forms, form spreaders, and fillers. Steel forms shall have a nominal length of 10 feet with a minimum of 3 welded stake pockets per form. Stake pins shall be solid steel rods with chamfered heads and pointed tips designed for use with steel forms.

2.6.1 Sidewalk Forms
Sidewalk forms shall be of a height equal to the full depth of the finished sidewalk.

2.6.2 Curb and Gutter Forms
Curb and gutter outside forms shall have a height equal to the full depth of the curb or gutter. The inside form of curb shall have batter as indicated and shall be securely fastened to and supported by the outside form. Rigid forms shall be provided for curb returns, except that benders or thin plank forms may be used for curb or curb returns with a radius of 10 feet or more, where grade changes occur in the return, or where the central angle is such that a rigid form with a central angle of 90° cannot be used. Back forms for curb returns may be made of 1-1/2 inch benders, for the full height of the curb, cleated together. In lieu of inside forms for curbs, a curb "mule" may be used for forming and finishing this surface, provided the results are approved.

PART 3 EXECUTION

3.1 SUBGRADE PREPARATION
The subgrade shall be constructed to the specified grade and cross section prior to concrete placement. Subgrade shall be placed and compacted in conformance with Section 310000 EARTHWORK.

3.1.1 Sidewalk Subgrade
The subgrade shall be tested for grade and cross section with a template extending the full width of the sidewalk and supported between side forms.

3.1.2 Curb and Gutter Subgrade
The subgrade shall be tested for grade and cross section by means of a template extending the full width of the curb and gutter. The subgrade shall be of materials equal in bearing quality to the subgrade under the adjacent pavement.

3.1.3 Maintenance of Subgrade
The subgrade shall be maintained in a smooth, compacted condition in conformity with the required section and established grade until the concrete is placed. The subgrade shall be in a moist condition when concrete is placed. The subgrade shall be prepared and protected to produce a subgrade free from frost when the concrete is deposited.

3.2 FORM SETTING
Set forms to the indicated alignment, grade and dimensions. Hold forms rigidly in place by a minimum of 3 stakes per form placed at intervals not to exceed 4 feet. Corners, deep sections, and radius bends shall have additional stakes and braces, as required. Clamps, spreaders, and braces shall be used where required to ensure rigidity in the forms. Forms shall be removed without injuring the concrete. Bars or heavy tools shall not be used against the concrete in removing the forms. Any concrete found defective after form removal shall be promptly and satisfactorily repaired. Forms shall be cleaned and coated with form oil each time before concrete is placed. Wood forms may, instead, be thoroughly wetted with water before concrete is placed, except that with probable freezing temperatures, oiling is mandatory.

3.2.1 Sidewalks

Set forms for sidewalks with the upper edge true to line and grade with an allowable tolerance of 1/8 inch in any 10 foot long section. After forms are set, grade and alignment shall be checked with a 10 foot straightedge. Forms shall have a transverse slope as indicated with the low side adjacent to the roadway. Side forms shall not be removed for 12 hours after finishing has been completed.

3.2.2 Curbs and Gutters

The forms of the front of the curb shall be removed not less than 2 hours nor more than 6 hours after the concrete has been placed. Forms back of curb shall remain in place until the face and top of the curb have been finished, as specified for concrete finishing. Gutter forms shall not be removed while the concrete is sufficiently plastic to slump in any direction.

3.3 SIDEWALK CONCRETE PLACEMENT AND FINISHING

3.3.1 Formed Sidewalks

Place concrete in the forms in one layer. When consolidated and finished, the sidewalks shall be of the thickness indicated. After concrete has been placed in the forms, a strike-off guided by side forms shall be used to bring the surface to proper section to be compacted. The concrete shall be consolidated with an approved vibrator, and the surface shall be finished to grade with a strike off.

3.3.2 Concrete Finishing

After straight-edging, when most of the water sheen has disappeared, and just before the concrete hardens, finish the surface with a wood float or darby to a smooth and uniformly fine granular or sandy texture free of waves, irregularities, or tool marks. A scored surface shall be produced by brooming with a fiber-bristle brush in a direction transverse to that of the traffic, followed by edging.

3.3.3 Edge and Joint Finishing

All slab edges, including those at formed joints, shall be finished with an edger having a radius of 1/8 inch. Transverse joint shall be edged before brooming, and the brooming shall eliminate the flat surface left by the surface face of the edger. Corners and edges which have crumbled and areas which lack sufficient mortar for proper finishing shall be cleaned and filled solidly with a properly proportioned mortar mixture and then finished.

3.3.4 Surface and Thickness Tolerances

Finished surfaces shall not vary more than 5/16 inch from the testing edge of a 10-foot straightedge. Permissible deficiency in section thickness will be up to 1/4 inch.

3.4 CURB AND GUTTER CONCRETE PLACEMENT AND FINISHING

3.4.1 Formed Curb and Gutter

Concrete shall be placed to the section required in a single lift. Consolidation shall be achieved by using approved mechanical vibrators. Curve shaped gutters shall be finished with a standard curb "mule".

3.4.2 Curb and Gutter Finishing

Approved slip formed curb and gutter machines may be used in lieu of hand placement.

3.4.3 Concrete Finishing

Exposed surfaces shall be floated and finished with a smooth wood float until true to grade and section and uniform in texture. Floated surfaces shall then be brushed with a fine-hair brush with longitudinal strokes. The edges of the gutter and top of the curb shall be rounded with an edging tool to a radius of 1/2 inch. Immediately after removing the front curb form, the face of the curb shall be rubbed with a wood or concrete rubbing block and water until blemishes, form marks, and tool marks have been removed. The front curb surface, while still wet, shall be

brushed in the same manner as the gutter and curb top. The top surface of gutter and entrance shall be finished to grade with a wood float.

3.4.4 Joint Finishing
Curb edges at formed joints shall be finished as indicated.

3.4.5 Surface and Thickness Tolerances
Finished surfaces shall not vary more than 1/4 inch from the testing edge of a 10-foot straightedge. Permissible deficiency in section thickness will be up to 1/4 inch.

3.5 SIDEWALK JOINTS
Sidewalk joints shall be constructed to divide the surface into rectangular areas. Transverse contraction joints shall be spaced at a distance equal to the sidewalk width or 5 feet on centers, whichever is less, and shall be continuous across the slab. Longitudinal contraction joints shall be constructed along the centerline of all sidewalks 10 feet or more in width. Transverse expansion joints shall be installed at sidewalk returns and opposite expansion joints in adjoining curbs. Where the sidewalk is not in contact with the curb, transverse expansion joints shall be installed as indicated. Expansion joints shall be formed about structures and features which project through or into the sidewalk pavement, using joint filler of the type, thickness, and width indicated. Expansion joints are not required between sidewalks and curb that abut the sidewalk longitudinally.

3.5.1 Sidewalk Contraction Joints
The contraction joints shall be formed in the fresh concrete by cutting a groove in the top portion of the slab to a depth of at least one-fourth of the sidewalk slab thickness, using a jointer to cut the groove, or by sawing a groove in the hardened concrete with a power-driven saw, unless otherwise approved. Sawed joints shall be constructed by sawing a groove in the concrete with a 1/8 inch blade to the depth indicated. An ample supply of saw blades shall be available on the job before concrete placement is started, and at least one standby sawing unit in good working order shall be available at the jobsite at all times during the sawing operations.

3.5.2 Sidewalk Expansion Joints
Expansion joints shall be formed with 1/2 inch joint filler strips. Joint filler in expansion joints surrounding structures and features within the sidewalk may consist of preformed filler material conforming to ASTM D 1752 or building paper. Joint filler shall be held in place with steel pins or other devices to prevent warping of the filler during floating and finishing. Immediately after finishing operations are completed, joint edges shall be rounded with an edging tool having a radius of 1/8 inch, and concrete over the joint filler shall be removed. At the end of the curing period, expansion joints shall be cleaned and filled with cold-applied joint sealant. Joint sealant shall be gray or stone in color. The joint opening shall be thoroughly cleaned before the sealing material is placed. Sealing material shall not be spilled on exposed surfaces of the concrete. Concrete at the joint shall be surface dry and atmospheric and concrete temperatures shall be above 50°F at the time of application of joint sealing material. Excess material on exposed surfaces of the concrete shall be removed immediately and concrete surfaces cleaned.

3.5.3 Reinforcement Steel Placement
Reinforcement steel shall be accurately and securely fastened in place with suitable supports and ties before the concrete is placed.

3.6 CURB AND GUTTER JOINTS
Curb and gutter joints shall be constructed at right angles to the line of curb and gutter.

3.6.1 Contraction Joints
Contraction joints shall be constructed directly opposite contraction joints in abutting portland cement concrete pavements and spaced so that monolithic sections between curb returns will not be less than 5 feet nor greater than 15 feet in length.

A. Contraction joints (except for slip forming) shall be constructed by means of 1/8 inch thick separators and of a section conforming to the cross section of the curb and gutter. Separators shall be removed as soon as practicable after concrete has set sufficiently to preserve the width and shape of the joint and prior to finishing.

B. When slip forming is used, the contraction joints shall be cut in the top portion of the gutter/curb hardened concrete in a continuous cut across the curb and gutter, using a power-driven saw. The depth of cut shall be at least one-fourth of the gutter/curb depth and 1/8 inch in width.

3.6.2 Expansion Joints

Expansion joints shall be formed by means of preformed expansion joint filler material cut and shaped to the cross section of curb and gutter. Expansion joints shall be provided in curb and gutter directly opposite expansion joints of abutting portland cement concrete pavement, and shall be of the same type and thickness as joints in the pavement. Where curb and gutter do not abut portland cement concrete pavement, expansion joints at least 1/2 inch in width shall be provided at intervals not less than 30 feet nor greater than 120 feet. Expansion joints shall be provided in non-reinforced concrete gutter at locations indicated. Expansion joints shall be sealed immediately following curing of the concrete or as soon thereafter as weather conditions permit. Expansion joints and the top 1 inch depth of curb and gutter contraction-joints shall be sealed with joint sealant. The joint opening shall be thoroughly cleaned before the sealing material is placed. Sealing material shall not be spilled on exposed surfaces of the concrete. Concrete at the joint shall be surface dry and atmospheric and concrete temperatures shall be above 50°F at the time of application of joint sealing material. Excess material on exposed surfaces of the concrete shall be removed immediately and concrete surfaces cleaned.

3.7 CURING AND PROTECTION

3.7.1 General Requirements

Protect concrete against loss of moisture and rapid temperature changes for at least 7 days from the beginning of the curing operation. Protect unhardened concrete from rain and flowing water. All equipment needed for adequate curing and protection of the concrete shall be on hand and ready for use before actual concrete placement begins. Protection shall be provided as necessary to prevent cracking of the pavement due to temperature changes during the curing period.

3.7.1.1 Mat Method

The entire exposed surface shall be covered with 2 or more layers of burlap. Mats shall overlap each other at least 6 inches. The mat shall be thoroughly wetted with water prior to placing on concrete surface and shall be kept continuously in a saturated condition and in intimate contact with concrete for not less than 7 days.

3.7.1.2 Impervious Sheeting Method

The entire exposed surface shall be wetted with a fine spray of water and then covered with impervious sheeting material. Sheets shall be laid directly on the concrete surface with the light-colored side up and overlapped 12 inches when a continuous sheet is not used. The curing medium shall not be less than 18-inches wider than the concrete surface to be cured, and shall be securely weighted down by heavy wood planks, or a bank of moist earth placed along edges and laps in the sheets. Sheets shall be satisfactorily repaired or replaced if torn or otherwise damaged during curing. The curing medium shall remain on the concrete surface to be cured for not less than 7 days.

3.7.1.3 Membrane Curing Method

A uniform coating of white-pigmented membrane-curing compound shall be applied to the entire exposed surface of the concrete as soon after finishing as the free water has disappeared from the finished surface. Formed surfaces shall be coated immediately after the forms are removed and in no case longer than 1 hour after the removal of forms. Concrete shall not be allowed to dry before the application of the membrane. If any drying has occurred, the surface of the concrete shall be moistened with a fine spray of water and the curing compound applied as soon

as the free water disappears. Curing compound shall be applied in two coats by hand-operated pressure sprayers at a coverage of approximately 200 square feet/gallon for the total of both coats. The second coat shall be applied in a direction approximately at right angles to the direction of application of the first coat. The compound shall form a uniform, continuous, coherent film that will not check, crack, or peel and shall be free from pinholes or other imperfections. If pinholes, abrasion, or other discontinuities exist, an additional coat shall be applied to the affected areas within 30 minutes. Concrete surfaces that are subjected to heavy rainfall within 3 hours after the curing compound has been applied shall be resprayed by the method and at the coverage specified above. Areas where the curing compound is damaged by subsequent construction operations within the curing period shall be resprayed. Necessary precautions shall be taken to insure that the concrete is properly cured at sawed joints, and that no curing compound enters the joints. The top of the joint opening and the joint groove at exposed edges shall be tightly sealed before the concrete in the region of the joint is resprayed with curing compound. The method used for sealing the joint groove shall prevent loss of moisture from the joint during the entire specified curing period. Approved standby facilities for curing concrete pavement shall be provided at a location accessible to the jobsite for use in the event of mechanical failure of the spraying equipment or other conditions that might prevent correct application of the membrane-curing compound at the proper time. Concrete surfaces to which membrane-curing compounds have been applied shall be adequately protected during the entire curing period from pedestrian and vehicular traffic, except as required for joint-sawing operations and surface tests, and from any other possible damage to the continuity of the membrane.

3.7.2 Backfilling

After curing, debris shall be removed and the area adjoining the concrete shall be backfilled, graded, and compacted to conform to the surrounding area in accordance with lines and grades indicated.

3.7.3 Protection

Completed concrete shall be protected from damage until accepted. Repair damaged concrete and clean concrete discolored during construction. Concrete that is damaged shall be removed and reconstructed for the entire length between regularly scheduled joints. Refinishing the damaged portion will not be acceptable. Removed damaged portions shall be disposed of as directed.

3.7.4 Protective Coating

Protective coating, of linseed oil mixture, shall be applied to the exposed-to-view concrete surface after the curing period, if concrete will be exposed to de-icing chemicals within 6 weeks after placement. Concrete to receive a protective coating shall be moist cured.

3.7.4.1 Application

Curing and backfilling operation shall be completed prior to applying two coats of protective coating. Concrete shall be surface dry and clean before each application. Coverage shall be by spray application at not more than 50 square yards/gallon for first application and not more than 70 square yards/gallon for second application, except that the number of applications and coverage for each application for commercially prepared mixture shall be in accordance with the manufacturer's instructions. Coated surfaces shall be protected from vehicular and pedestrian traffic until dry.

3.7.4.2 Precautions

Protective coating shall not be heated by direct application of flame or electrical heaters and shall be protected from exposure to open flame, sparks, and fire adjacent to open containers or applicators. Material shall not be applied at ambient or material temperatures lower than 50°F.

3.8 FIELD QUALITY CONTROL

3.8.1 General Requirements

The Owner's designated Testing Laboratory shall perform the inspection and tests described. Based upon the results of these inspections and tests, the contractor shall take the action and submit reports as required below, and any additional tests to insure that the requirements of these specifications are met.

3.8.2 Concrete Testing

3.8.2.1 Strength Testing

Provide molded concrete specimens for strength tests. Samples of concrete placed each day shall be taken not less than once a day nor less than once for every 100 cubic yards of concrete. The samples for strength tests shall be taken in accordance with ASTM C 172. Cylinders for acceptance shall be molded in conformance with ASTM C 31/C 31M by an approved testing laboratory. Each strength test result shall be the average of 2 test cylinders from the same concrete sample tested at 28 days, unless otherwise specified or approved. Concrete specified on the basis of compressive strength will be considered satisfactory if the averages of all sets of three consecutive strength test results equal or exceed the specified strength, and no individual strength test result falls below the specified strength by more than 500 psi.

3.8.2.2 Air Content

Determine air content in accordance with ASTM C 173/C 173M or ASTM C 231. ASTM C 231 shall be used with concretes and mortars made with relatively dense natural aggregates. Two tests for air content shall be made on randomly selected batches of each class of concrete placed during each shift. Additional tests shall be made when excessive variation in concrete workability is reported by the placing foreman or the on-site inspector. If results are out of tolerance, the placing foreman shall be notified and he shall take appropriate action to have the air content corrected at the plant. Additional tests for air content will be performed on each truckload of material until such time as the air content is within the tolerance specified.

3.8.2.3 Slump Test

Two slump tests shall be made on randomly selected batches of each class of concrete for every 100 cubic yards, or fraction thereof, of concrete placed during each shift. Additional tests shall be performed when excessive variation in the workability of the concrete is noted or when excessive crumbling or slumping is noted along the edges of slip-formed concrete.

3.8.3 Thickness Evaluation

The anticipated thickness of the concrete shall be determined prior to placement by passing a template through the formed section or by measuring the depth of opening of the extrusion template of the curb forming machine. If a slip form paver is used for sidewalk placement, the subgrade shall be true to grade prior to concrete placement and the thickness will be determined by measuring each edge of the completed slab.

3.8.4 Surface Evaluation

The finished surface of each category of the completed work shall be uniform in color and free of blemishes and form or tool marks.

3.9 SURFACE DEFICIENCIES AND CORRECTIONS

3.9.1 Thickness Deficiency

When measurements indicate that the completed concrete section is deficient in thickness by more than 1/4 inch the deficient section will be removed, between regularly scheduled joints, and replaced.

3.9.2 High Areas

In areas not meeting surface smoothness and plan grade requirements, high areas shall be reduced either by rubbing the freshly finished concrete with carborundum brick and water when the concrete is less than 36 hours old or by grinding the hardened concrete with an approved surface grinding machine after the concrete is 36 hours old or more. The area corrected by grinding the surface of the hardened concrete shall not exceed 5 percent of the area of any integral slab, and the depth of grinding shall not exceed 1/4 inch. Pavement areas requiring grade or surface smoothness corrections in excess of the limits specified above shall be removed and replaced.

3.9.3 Appearance

Exposed surfaces of the finished work will be inspected by the Engineer and any deficiencies in appearance will be identified. Areas which exhibit excessive cracking, discoloration, form marks, or tool marks or which are otherwise inconsistent with the overall appearances of the work shall be removed and replaced.

END OF SECTION

SECTION 32 17 23

PAVEMENT MARKINGS AND SIGNAGE

PART 1 GENERAL

1.1 RELATED DOCUMENTS

The Conditions of the Contract, including the Uniform General and Supplementary General Conditions, Owner's Special Conditions, and Division 1 – General Requirements, apply to work specified in this Section.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM D 2240	(2005) Standard Test Method for Rubber Property - Durometer Hardness
ASTM D 2621	(1987; R 2005) Infrared Identification of Vehicle Solids from Solvent-Reducible Paints
ASTM D 2697	(2003) Volume Nonvolatile Matter in Clear or Pigmented Coatings
ASTM D 3335	(1985a; R 2005) Low Concentrations of Lead, Cadmium, and Cobalt in Paint by Atomic Absorption Spectroscopy
ASTM D 3718	(1985a; R 2005) Low Concentrations of Chromium in Paint by Atomic Absorption Spectroscopy
ASTM D 3924	(1980; R 2005) Standard Environment for Conditioning and Testing Paint, Varnish, Lacquer, and Related Materials
ASTM D 3960	(2005) Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings
ASTM D 4280	(2008) Extended Life Type, Nonplowable, Raised, Retroreflective Pavement Markers
ASTM D 4505	(2005) Preformed Retroflective Pavement Marking Tape for Extended Service Life
ASTM D 4541	(2002) Pull-Off Strength of Coatings Using Portable Adhesion Testers
ASTM D 471	(2006; R 2008) Standard Test Method for Rubber Property - Effect of Liquids
ASTM D 522	(1993a; R 2008) Mandrel Bend Test of Attached Organic Coatings
ASTM D 711	(1989; R 2004) No-Pick-Up Time of Traffic Paint

ASTM D 792	(2008) Density and Specific Gravity (Relative Density) of Plastics by Displacement
ASTM D 823	(1995; R 2007) Producing Films of Uniform Thickness of Paint, Varnish, and Related Products on Test Panels.
ASTM E 28	(1999; R 2004) Softening Point of Resins Derived from Naval Stores by Ring and Ball Apparatus
ASTM G 53	(1996) Operating Light- and Water-Exposure Apparatus (Fluorescent UV-Condensation Type) for Exposure of Nonmetallic Materials

INTERNATIONAL CONCRETE REPAIR INSTITUTE (ICRI)

ICRI 03732	(1997) Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays

1.3 SUBMITTALS

The following shall be submitted in accordance with Section 013300 SUBMITTAL PROCEDURES:

SD-03 Product Data

Reflective media for roads and streets

Paints for roads and streets

High Build Acrylic Coating (HBAC)

Equipment

Lists of proposed equipment, including descriptive data, and notifications of proposed Contractor actions as specified in this section. List of removal equipment shall include descriptive data indicating area of coverage per pass, pressure adjustment range, tank and flow capacities, and safety precautions required for the equipment operation.

Qualifications

Documentation on personnel qualifications, as specified.

SD-06 Test Reports

Reflective media for roads and streets

Paints for roads and streets

High Build Acrylic Coating (HBAC);

SD-07 Certificates

Not required.

SD-08 Manufacturer's Instructions

Paints for roads and streets

Submit manufacturer's Material Safety Data Sheets.

1.4 DELIVERY AND STORAGE

Deliver paints, paint materials and thermoplastic compound materials in original sealed containers that plainly show the designated name, specification number, batch number, color, date of manufacture, manufacturer's directions, and name of manufacturer. Provide storage facilities at the job site, for maintaining materials at temperatures recommended by the manufacturer. Make available paint stored at the project site or segregated at the source for sampling not less than 30 days prior to date of required approval for use to allow sufficient time for testing. Notify the Engineer when paint is available for sampling.

1.5 WEATHER LIMITATIONS

Apply paint to clean, dry surfaces, and unless otherwise approved, only when the air and pavement surface temperature is at least 5°F above the dew point and the air and pavement temperatures are above 40°F and less than 95°F for oil-based materials; above 50°F and less than 110°F for water-based materials. Maintain paint temperature within these same limits.

1.6 EQUIPMENT

Machines, tools, and equipment used in the performance of the work shall be approved by the Engineer and maintained in satisfactory operating condition. Submit construction equipment list for approval by the Engineer.

1.6.1 Mobile and Maneuverable

Application equipment shall be mobile and maneuverable to the extent that straight lines can be followed and normal curves can be made in a true arc.

1.6.2 Paint Application Equipment

1.6.2.1 Hand-Operated, Push-Type Machines

Provide hand-operated push-type applicator machine of a type commonly used for application of paint to pavement surfaces. Paint applicator machine shall be acceptable for marking small street and parking areas. Applicator machine shall be equipped with the necessary paint tanks and spraying nozzles, and shall be capable of applying paint uniformly at coverage specified. Applicator for water-based markings shall be equipped with non-stick coated hoses; metal parts in contact with the paint material shall be constructed of grade 302, 304, 316, or equal stainless steel.

1.6.2.2 Self-Propelled or Mobile-Drawn Pneumatic Spraying Machines

Provide self-propelled or mobile-drawn pneumatic spraying machine with suitable arrangements of atomizing nozzles and controls to obtain the specified results. Provide machine having a speed during application capable of applying the stripe widths indicated at the paint coverage rate specified herein and of even uniform thickness with clear-cut edges. Provide paint applicator with paint reservoirs or tanks of sufficient capacity and suitable gages to apply paint in accordance with requirements specified. Equip tanks with suitable air-driven mechanical agitators. Equip spray mechanism with quick-action valves conveniently located, and include necessary pressure regulators and gages in full view and reach of the operator. Install paint strainers in paint supply lines to ensure freedom from residue and foreign matter that may cause malfunction of the spray guns. The paint applicator shall be readily adaptable for attachment of an air-actuated dispenser for the reflective media approved for use. Provide pneumatic spray guns for hand application of paint in areas where the mobile paint applicator cannot be used. Applicator for water-based

markings shall be equipped with non-stick coated hoses; metal parts in contact with the paint material shall be constructed of grade 302, 304, 316, or equal stainless steel.

1.6.3 Not Used

1.6.4 Reflective Media Dispenser
The dispenser for applying the reflective media shall be attached to the paint dispenser and shall operate automatically and simultaneously with the applicator through the same control mechanism. The dispenser shall be capable of adjustment and designed to provide uniform flow of reflective media over the full length and width of the stripe at the rate of coverage specified in paragraph APPLICATION, at all operating speeds of the applicator to which it is attached.

1.6.5 Preformed Tape Application Equipment
Mechanical application equipment shall be used for the placement of preformed marking tape. Mechanical application equipment shall be defined as a mobile pavement marking machine specifically designed for use in applying precoated, pressure-sensitive pavement marking tape of varying widths, up to 12 inches. The applicator shall be equipped with rollers, or other suitable compactive device, to provide initial adhesion of the preformed, pressure-sensitive marking tape with the pavement surface. Additional hand-operated rollers shall be used as required to properly seat the thermoplastic tape.

1.6.6 Surface Preparation Equipment

1.6.6.1 Sandblasting Equipment
Sandblasting equipment shall include an air compressor, hoses, and nozzles of proper size and capacity as required for cleaning surfaces to be painted. The compressor shall be capable of furnishing not less than 150 cfm of air at a pressure of not less than 90 psi at each nozzle used, and shall be equipped with traps that will maintain the compressed air free of oil and water.

1.6.6.2 Waterblast Equipment
The water pressure shall be specified at 2600 psi at 140°F in order to adequately clean the surfaces to be marked. Water will be furnished at no cost to the Contractor from a fire hydrant designated by the Engineer or authorized representative and located within a reasonable proximity to the work area. The Contractor shall install a gate valve and a back-flow prevention device on the fire hydrant tap. The Contractor shall furnish all equipment, material, and labor required to obtain and deliver water from the designated fire hydrant to the work area(s).

1.6.7 Marking Removal Equipment
Equipment shall be mounted on rubber tires and shall be capable of removing markings from the pavement without damaging the pavement surface or joint sealant. Waterblasting equipment shall be capable of producing an adjustable, pressurized stream of water. Sandblasting equipment shall include an air compressor, hoses, and nozzles. The compressor shall be equipped with traps to maintain the air free of oil and water.

1.6.7.1 Shotblasting Equipment
Shotblasting equipment shall be capable of producing an adjustable depth of removal of marking and pavement. Each unit shall be self-cleaning and self-contained, shall be able to confine dust and debris from the operation, and shall be capable of recycling the abrasive for reuse.

1.6.7.2 Chemical Equipment
Chemical equipment shall be capable of application and removal of chemicals from the pavement surface, and shall leave only non-toxic biodegradeable residue.

1.6.8 Traffic Controls

Suitable warning signs shall be placed near the beginning of the worksite and well ahead of the worksite for alerting approaching traffic from both directions. Small markers shall be placed along newly painted lines or freshly placed raised markers to control traffic and prevent damage to newly painted surfaces or displacement of raised pavement markers. Painting equipment shall be marked with large warning signs indicating slow-moving painting equipment in operation.

1.7 MAINTENANCE OF TRAFFIC

1.7.1 Roads, Streets, and Parking Areas

When traffic must be rerouted or controlled to accomplish the work, the necessary warning signs, flagpersons, and related equipment for the safe passage of vehicles shall be provided.

1.8 WEATHER LIMITATIONS FOR REMOVAL

Pavement surface shall be free of snow, ice, or slush. Surface temperature shall be at least 40°F and rising at the beginning of operations, except those involving shot or sand blasting. Operation shall cease during thunderstorms. Operation shall cease during rainfall, except for waterblasting and removal of previously applied chemicals. Waterblasting shall cease where surface water accumulation alters the effectiveness of material removal.

1.9 QUALIFICATIONS

The Contractor shall submit documentation certifying that pertinent personnel are qualified for equipment operation and handling of chemicals.

PART 2 PRODUCTS

2.1 MATERIALS

Provide materials conforming to the requirements specified herein.

2.1.1 Paints for Airfields

NOT USED

2.1.2 Paints for Roads and Streets

High Build Acrylic Coating (HBAC), color as indicated.

2.1.3 Reflective Media for Airfields

NOT USED

2.1.4 Reflective Media for Roads and Streets

FS TT-B-1325, Type I, Gradation A.

2.1.5 Thermoplastic Compound

The thermoplastic reflectorized pavement marking compound shall be extruded or sprayed in a molten state onto a primed pavement surface. Following a surface application of glass beads and upon cooling to normal pavement temperatures, the marking shall be an adherent reflectorized strip of the specified thickness and width that is capable of resisting deformation by traffic.

2.1.5.1 Composition Requirements

The binder component shall be formulated as a hydrocarbon resin. The pigment, beads and filler shall be uniformly dispersed in the binder resin. The thermoplastic composition shall be free from all skins, dirt, and foreign objects and shall comply with the following requirements:

	Percent by Weight	
Component	White	Yellow

Binder	17 min	17 min	
Titanium dioxide	10 min		-
Glass beads	20 min		20 min
Calcium carbonate and inert fillers	49 min	*	
Yellow pigments	-	*	

* Amount and type of yellow pigment, calcium carbonate and inert fillers shall be at the option of the manufacturer, providing the other composition requirements of this specification are met.

2.1.5.2 Physical Properties

A. Drying time: When installed at 70°F and in thicknesses between 0.120 and 0.190 inch, the composition shall be completely solid and shall show no damaging effect from traffic after curing 15 minutes.

B. Softening point: The composition shall have a softening point of not less than 194°F when tested in accordance with ASTM E 28.

C. Specific gravity: The specific gravity of the composition shall be between 1.9 and 2.2 as determined in accordance with ASTM D 792.

2.1.5.3 Primer

A. Asphalt concrete primer: The primer for asphalt concrete pavements shall be a thermosetting adhesive with a solids content of pigment reinforced synthetic rubber and synthetic plastic resin dissolved or dispersed in a volatile organic solvent. The solids content shall not be less than 10 percent by weight at 70°F and 60 percent relative humidity. A wet film thickness of 0.005 inch, plus or minus 0.001 inch, shall dry to a tack-free condition in less than 5 minutes.

B. Portland cement concrete primer: The primer for portland cement concrete pavements shall be an epoxy resin primer. The primer shall be of the type recommended by the manufacturer of the thermoplastic composition.

2.1.6 Preformed Tape

The preformed tape shall be an adherent reflectorized strip in accordance with ASTM D 4505 Type I or IV, Class optional.

2.1.7 Raised Pavement Markers

Either metallic or nonmetallic markers of the button or prismatic reflector type may be used. Markers shall be of permanent colors as specified for pavement marking, and shall retain the color and brightness under the action of traffic. Button markers shall have a diameter of not less than 4 inches, and shall be spaced not more than 40 feet apart on solid longitudinal lines. Broken centerline marker spacings shall be in segments indicated with gaps indicated between segments. Button markers shall have rounded surfaces presenting a smooth contour to traffic and shall not project more than 3/4 inch above level of pavement. Pavement markers and adhesive epoxy shall conform to ASTM D 4280

2.1.8 High Build Acrylic Coating (HBAC)

Formulate High Build Acrylic Coating (HBAC) to meet the requirements of Table I.

2.1.8.1 Preapproved HBAC Vendors and Materials

Table II presents a partial list of HBAC vendors and materials. Up to specifications's date of issue, preapproved materials met specification requirements. It is the user's responsibility to confirm preapproved material formulations have not changed and specification requirements will be met. Other products may meet HBAC requirements.

PART 3 EXECUTION

3.1 SURFACE PREPARATION

Allow new pavement surfaces to cure for a period of not less than 30 days before application of marking materials. Thoroughly clean surfaces to be marked before application of the paint. Remove dust, dirt, and other granular surface deposits by sweeping, blowing with compressed air, rinsing with water, or a combination of these methods as required. Remove existing paint markings, residual curing compounds, and other coatings adhering to the pavement by approved chemical removal method according to the removal requirements and procedures outlined in Section 320111.51. For Portland Cement Concrete pavement, grinding, light shot blasting, and light scarification, to a resulting profile equal to ICRI 03732 CSP 2, CSP 3, and CSP 4, respectively, can be used in addition to water blasting, to either remove existing coatings or for surface preparation on most pavements: shot blasting shall not be used on airfield pavements due to the potential of Foreign Object Damage (FOD) to aircraft. Scrub affected areas, where oil or grease is present on old pavements to be marked, with several applications of trisodium phosphate solution or other approved detergent or degreaser and rinse thoroughly after each application. After cleaning oil-soaked areas, seal with shellac or primer recommended by the manufacturer to prevent bleeding through the new paint. Do not commence painting in any area until pavement surfaces are dry and clean.

3.1.1 Early Painting of Rigid Pavements

Pretreat rigid pavements that require early painting with an aqueous solution containing 3 percent phosphoric acid and 2 percent zinc chloride. Apply the solution to the areas to be marked.

3.1.2 Early Painting of Asphalt Pavements

For asphalt pavement systems requiring painting application at less than 30 days, apply the paint and beads at half the normal application rate, followed by a second application at the normal rate after 30 days.

3.2 APPLICATION

3.2.1 Testing for Moisture

Apply pavement markings to dry pavement only. The Contractor shall test the pavement surface for moisture before beginning work after each period of rainfall, fog, high humidity, or cleaning, or when the ambient temperature has fallen below the dew point. Do not commence marking until the pavement is sufficiently dry and the pavement condition has been approved by the CO or authorized representative. Employ the "plastic wrap method" to test the pavement for moisture as follows: Cover the pavement with a 300 mm by 300 mm (12 inch by 12 inch) section of clear plastic wrap and seal the edges with tape. After 15 minutes, examine the plastic wrap for any visible moisture accumulation inside the plastic. Do not begin marking operations until the test can be performed with no visible moisture accumulation inside the plastic wrap.

3.2.2 Rate of Application

3.2.2.1 Reflective Markings

Apply paint evenly to the pavement area to be coated at a rate of 105 plus or minus 5 square feet per gallon. [Apply High Build Acrylic Coating (HBAC) at a rate of 50 square feet per gallon. Apply glass spheres uniformly to the wet paint on road and street pavement at a rate of (6) plus or minus (0.5) pounds of glass spheres per gallon. Collect and record readings for white and yellow retroreflective markings at the rate of one reading per 1000 linear feet. The minimum acceptable average for white markings is 200 millicandelas per square meter per lux (mcd/m2/lx) (measured with Mirolux 12 Retroreflectometer or similar instrument as agreed). The minimum acceptable average for yellow markings is 175 millicandelas per square meter per lux (mcd/m2/lx). Readings shall be computed by averaging a minimum of 10 readings taken within the area at random locations. Areas not meeting the retroreflective requirements stated above shall be re-marked.

3.2.2.2 Nonreflective Markings

Apply paint evenly to the pavement surface to be coated at a rate of 105 plus or minus 5 square feet per gallon. Apply High Build Acrylic Coating (HBAC) at a rate of 50 square feet per gallon.

3.2.2.3 Thermoplastic Compound

After surface preparation has been completed, prime the asphalt or concrete pavement surface with spray equipment. Allow primer materials to "set-up" prior to applying the thermoplastic composition. Allow the asphalt concrete primer to dry to a tack-free condition, usually occurring in less than 10 minutes. Allow the Portland Cement concrete primer to dry in accordance with the thermoplastic manufacturer recommendations. To shorten the curing time of the epoxy resins, an infrared heating device may be used on the concrete primer. Apply asphalt concrete primer to all asphalt concrete pavements at a wet film thickness of 0.005 inch, plus or minus 0.001 inch 265 to 400 square feet per gallon. Apply portland cement concrete primer to all concrete pavements (including concrete bridge decks) at a wet film thickness of between 0.04 to 0.05 inch 320 to 400 square feet per gallon. After the primer has "set-up", apply the thermoplastic at temperatures no lower than 375°F nor higher than 425°F at the point of deposition. Immediately after installation of the marking, apply drop-on reflective glass spheres mechanically at the rate of one pound per 20 square feet such that the spheres are held by and imbedded in the surface of the molten material. Apply all extruded thermoplastic markings at the specified width and at a thickness of not less than 0.125 inch nor more than 0.190 inch. Apply all sprayed thermoplastic markings at the specified width and the thickness designated in the contract plans. If the plans do not specify a thickness, apply centerline markings at a wet thickness of 0.090 inch, plus or minus 0.005 inch, and edgeline markings at a wet thickness of 0.060 inch, plus or minus 0.005 inch.

3.2.3 Painting

Apply paint pneumatically with approved equipment at rate of coverage specified herein. Provide guidelines and templates as necessary to control paint application. Take special precautions in marking numbers, letters, and symbols. Manually paint numbers, letters, and symbols. Sharply outline all edges of markings. The maximum drying time requirements of the paint specifications will be strictly enforced, to prevent undue softening of bitumen, and pickup, displacement, or discoloration by tires of traffic. Discontinue painting operations if there is a deficiency in drying of the markings until cause of the slow drying is determined and corrected.

3.2.4 Reflective Media

Application of reflective media shall immediately follow the application of paint. Accomplish drop-on application of the glass spheres to ensure even distribution at the specified rate of coverage. Should there be malfunction of either paint applicator or reflective media dispenser, discontinue operations until deficiency is corrected.

3.2.5 Thermoplastic Compound

Place thermoplastic pavement markings upon dry pavement. At the time of installation the pavement surface temperature shall be a minimum of 40°F and rising. Thermoplastics, as placed, shall be free from dirt or tint. Apply all centerline, skipline, edgeline, and other longitudinal type markings with a mobile applicator. Place all special markings, crosswalks, stop bars, legends, arrows, and similar patterns with a portable applicator, using the extrusion method.

3.2.6 Raised Pavement Markers

Prefabricated markers shall be aligned carefully at the required spacing or as directed and permanently fixed in place by means of epoxy adhesives. To ensure good bond, areas where markers will be set shall be thoroughly cleaned by water blasting and use of compressed air prior to applying adhesive.

3.3 FIELD TESTING, INSPECTION, AND DEMONSTRATIONS

3.3.1 Sampling and Testing

As soon as the paint and reflective and thermoplastic materials are available for sampling, obtain by random selection from the sealed containers, two quart samples of each batch in the presence of the Engineer. Accomplish adequate mixing prior to sampling to ensure a uniform, representative sample. A batch is defined as that quantity of material processed by the manufacturer at one time and identified by number on the label. Clearly identify samples by designated name, specification number, batch number, project contract number, intended use, and quantity involved. Test samples by an approved laboratory. If a sample fails to meet specification, replace the material in the area represented by the samples and retest the replacement material as specified above. Submit copy of the test results to the Engineer. Include in the report of test results a listing of any specification requirements not verified by the test laboratory.

3.3.2 Inspection

Examine material at the job site to determine that it is the material referenced in the report of test results or certificate of compliance. A certificate of compliance shall be accompanied by test results substantiating conformance to the specified requirements.

3.3.3 Surface Preparations and Application Procedures

Surface preparations and application procedures will be examined by the Engineer to determine conformance with the requirements specified. Approve each separate operation prior to initiation of subsequent operations.

3.4 TRAFFIC CONTROL AND PROTECTION

Place warning signs near the beginning of the work site and well ahead of the work site for alerting approaching traffic from both directions. Place small markers along newly painted lines to control traffic and prevent damage to newly painted surfaces. Mark painting equipment with large warning signs indicating slow-moving painting equipment in operation. Do not use foil-backed material for temporary pavement marking because of its potential to conduct electricity during accidents involving downed power lines.

3.5 QUALITY ASSURANCE

Demonstrate success of bond of reflective media, new paint marking and the pavement surface, vacuum cured surface of new marking after a seven (7) day dry time. Inspect newly applied markings for signs of bond failure based on visual inspection and comparison to results from Test Stripe Demonstration paragraph.

3.5.1 Reflective Media and Coating Bond Verification

Within seven (7) days after pavement marking application, use industrial vacuum to sweep new markings. Visually inspect the pavement markings and the material captured by the vacuum. Verify that no significant loss of reflective media has occurred to the pavement marking due to the vacuum cleaning.

3.5.2 Reflective Media and Coating Application Verification

Use a wet film thickness gauge to measure the application of wet paint.

Use a microscope or magnifying glass to evaluate the embedment of glass beads in the paint. Verify the glass bead embedment with approximately 50% of the beads embedded and 50% of the beads exposed.

TABLE I

REQUIREMENTS FOR HIGH BUILD ACRYLIC COATINGS (HBAC)

Test	Minimum Requirement (and Maximum where indicated)
Resin System (ASTM D 2621)	Waterborne 100% Acrylic
Percent Volume Solids (ASTM D 2697)	58%
Volatile Organic Compound, max. (ASTM D 3960)	1.25 lbs/gal
White (FED-STD-595)	37925
Yellow (FED-STD-595)	33538
Shore D Hardness (ASTM D 2240)	45
1/8 inch Mandrel Bend @ 5 mils Dry Film Thickness (DFT, one-week cure (ASTM D 522, Method B)	No visual defects at bend (Conditions @ ASTM D 3924)
Adhesion to Concrete and Asphaltic Pavements (ASTM D 4541)	140 psi or 100% cohesive failure in pavement
Accelerated Weathering, Yellow, 2500 Hours UV Exposure (ASTM G 53: see note 1)	Max. color loss to 33655 (FED-STD-595)
Water Absorption @ 168 Hours Immersion Tap Water (ASTM D 471)	9.0% max. weight increase (conditions @ ASTM D 3924)
Application @ 65 mils Wet, One Coat, One-week Cure, (see note 2)	No visual cracking or curling (conditions @ ASTM D 3924)
No Pick-Up @ 25 mils (ASTM D 711)	Wet 10 minutes max.
Lead (ASTM D 3335)	0.06% max.
Cadmium (ASTM D 3335)	0.06% max.
Chromium (ASTM D 3718) 0.00%	

Notes:

(1) Properly mix and apply yellow paint at 10 mils +/- 2 mils DFT over a suitably sized, clean aluminum substrate (ASTM D 823), and cure for a minimum of 48 hours: four individual yellow samples shall be prepared. Expose three samples to continuous Ultraviolet (UV) light for 2500 hours, without cycles condensation, in accordance to ASTM G 53: UVA-340 lamps shall be used in the testing apparatus. Following exposure, compare the three exposed samples to the "one" non-exposed sample using FED-STD-595 colors 33538 and 33655 as visual references: evaluate exposed samples for degree of visual color loss. Yellow paint shall receive a passing rating if each exposed sample appears equivalent to the non-exposed sample, and in addition, displays color loss no greater than FED-STD-595 color 33655.

(2) Using double-stick, foam mounting tape (or equal) with a nominal thickness of 65 mils, apply a rectangular mold with inner dimensions of 3 in by 10 in to a clean aluminum sample approximately sized at 6 in by 12 in by 1/8 in. Do not remove the tape's plastic backing. Mix and apply excess paint into mold. Remove excess paint, by squeegee or other appropriate draw down technique, to a uniform thickness equal to the tape's height. Paint application and draw down shall be performed within a period of no more than 60 seconds. Approximately one to two minutes following the draw down, remove tape from sample and allow coating to cure for a minimum period of one week ASTM D 3924. Using a micrometer or other appropriate device, measure cured coating thickness (less sample thickness) to confirm resulting coating application was at or above 38 mils DFT. Inspect coating for visual signs of cracking and curling. Following a one week cure, coating shall receive a passing rating if applied greater than 38 mils DFT and visually free of both cracking and curling.

TABLE II

PREAPPROVED HBACs

Manufacturer	Products
TMT-Pathway 1021 N. Mission Road Los Angeles, CA 90033 (800) 338-7680	Legend Build, #2712A9, White Legend Build, #2713A9, Yellow
Pervo Paints 6624 Stanford Ave. Los Angeles, CA 90001 (323) 758-1147	Pervo 6050, White Pervo 6053, Yellow
Vogel Traffic Services 1920 Albany Place South PO Box 140 Orange City, IA 51041 (712) 737-4016	UC-1516, White UC-3588, Yellow

END OF SECTION