

# **IVY TECH COMMUNITY COLLEGE - OGLE HALL AV UPGRADES**

## **PROJECT MANUAL**

06/08/2026

### **OWNER**

**IVY TECH COMMUNITY COLLEGE – SELLERSBURG CAMPUS**

8204 Hwy 311  
SELLERSBURG, IN 47172

### **PROJECT NUMBER**

**Architect's Project No. 26064.003**

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## **Additional Bidding and Contract Requirements**

**for**

### **Ivy Tech Community College**

All bid specifications, contracts and subcontracts for the construction, alteration and/or repair of a building or other improvement at Ivy Tech Community College shall contain the provisions listed herein.

#### **A. Drug Testing:**

All Contractors and Subcontractor(s) shall maintain a drug-free workplace for all Ivy Tech projects. To accomplish this objective, a Contractor must adopt a written drug and alcohol testing policy which contains the following:

1. Require all employees to possess an identification card which indicates that the employee has passed a drug test within the past twenty-five months. This identification card shall bear the employee's name and an identification number assigned to that employee.
2. Require all employees to be tested for drugs and/or alcohol within forty-eight hours of a work-related accident or incident.
3. Require all employees to be tested for drugs and/or alcohol if a reasonable suspicion exists that they are impaired by drugs or alcohol.
4. Require that all substance abuse testing, at a minimum, be conducted in accordance with the Department of Health and Human Services (DHHS) "Mandatory Guidelines for Federal Workplace Drug Testing Programs" as set forth in the Federal Register.
5. Require that only laboratories certified by the Department of Health and

Human Services/Substance Abuse and Mental Health Administration (DHHS/SAMSHA) shall perform urine testing for drugs.

6. Appoint a Medical Review Officer who will be responsible for reviewing positive test results, communicating these results to the affected employee, determining whether any verifiable explanation exists for the positive test result, and advising the Employer of the revocation of an employee's drug testing card.
7. Establish initial and confirmatory cut-off levels for positive drug tests that conform to the levels set forth in the "Mandatory Guidelines for Federal Workplace Drug Testing Programs." All positive tests must be confirmed by gas chromatography/mass technology.
8. Establish cut-off levels for alcohol testing that are equivalent to the values established by the United States Department of Transportation (DOT) under its Commercial Drivers License guidelines.
9. Create drug and alcohol testing procedures that protect the privacy of employees, guarantee a proper chain of custody for all samples, and afford employees with the opportunity to have independent retests of positive urine samples.
10. Require that the Contractor be responsible for the entire expense of administering this drug free workplace program including, but not limited to, the cost of all drug and alcohol testing, and the retention of Medical Review Officers.

A Contractor and or Subcontractor shall provide Ivy Tech with a written drug free workplace policy, which contains the above provisions, at least ten (10) days prior to commencing work under any contract.

**B. Minority Opportunities:**

Contractors and Subcontractors shall engage in their best efforts to recruit minority apprentices and trainees including participation in the Indiana Plan or its equivalent.

**C. Independent Contractors:**

All Contractors and Subcontractors shall solely use their own employees to perform any construction, alteration or repair work on an Ivy Tech project. A Contractor or Subcontractor shall not use or retain an individual or individuals acting in the capacity of independent contractor to perform any such construction work.

# **MINIMUM INSURANCE REQUIREMENTS FOR CONTRACTS**



*January 2016*

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## **I. SCOPE**

The following insurance requirements have been designed to facilitate the execution of contracts by duly authorized employees of Ivy Tech Community College. They are to be applied to all contracts entered into by Ivy Tech Community College with entities that include but are not limited to: for profit businesses supplying goods or services, not for profit businesses and organizations, independent consultants, or other academic institutions. (For the purposes of this document, all of these entities will be referred to as "contractor / vendor") Where the following topics only apply in certain situations, it is noted in that section of the document.

## **II. INSURANCE COVERAGE**

Insurance coverage serves as part of the financial backing for the liability assumed by a contracting party through the indemnification language in a contract. Instead of intentionally utilizing its own assets to support the liability, the contracting party is transferring the risk to the insurance company in return for payment of the insurance premium. Without insurance, most contractors / vendors would not be able to meet their indemnification obligations when a significant loss occurs.

Central Office Risk Management requires that all contractor / vendor insurance policies be written on a primary basis and be non-contributory with any other insurance coverages and/or self-insurance carried by Ivy Tech. Coverage should be provided by a carrier approved to do business in the state of Indiana. The coverages and minimum limits that Central Office Risk Management requires are a reflection of the perceived risk potential that the activities of the contractor / vendor could impose onto Ivy Tech but in no way limits the liability of the contractor/vendor. If the contractor/vendor has no insurance coverage or inadequate limits to cover the cost of a contract related claim(s), Ivy Tech may seek a court order to attach the contracting party's assets to satisfy indemnity against incurred damages.

For most contractors / vendors, Central Office Risk Management will generally require the contract/agreement reflect a minimum level of insurance limits on four types of insurance coverage: Commercial General Liability, Workers' Compensation, Business Automobile Liability and Umbrella or Excess Liability.

### **COMMERCIAL GENERAL LIABILITY**

Commercial General Liability is a broad based insurance that covers the liability assumed in the performance of the general, non-professional activities of many businesses. In most cases the General Liability insurance will be the primary policy responding to negligent acts or conditions (e.g. a person injured from a tool dropped or mishandled by a contractor / vendor).

Contractors, vendors and other outside businesses and organizations that want to do business with Ivy Tech or otherwise conduct business on Ivy Tech's property will be required to provide evidence of commercial general liability insurance and to name Ivy Tech as an additional insured to the organization's insurance policy. (Please see the Certificates of Insurance section below for required wording). Examples of outside businesses and organizations that will be required to meet these requirements include but are not limited to: consultants; construction contractors and other building services contractors (electricians, plumbers and HVAC); vendors providing campus event activities and services; and non-affiliated organizations using Ivy Tech facilities for meetings, seminars, athletic events, etc.

The minimum amount of insurance limits required by Central Office Risk Management are based on the level of risk involved with the type of service provided / activity taking place and the scope and nature of the project to be completed (e.g. could negligent work by the contractor / vendor result in significant damage to Ivy Tech's property, business operations or injury to Ivy Tech's students, employees or visitors).

## WORKERS' COMPENSATION

Workers' Compensation covers an employer's statutory financial obligation to pay the costs associated with an employee's medical treatment and lost wages due to a work related injury or illness. With very limited exceptions, state laws require all businesses are required to either purchase workers' compensation coverage or become an authorized self-insurer by statute. (Exceptions include businesses whose legal status is a Partnership, Limited Liability Partnership, Professional Limited Liability Partnership, Limited Liability Company, Professional Limited Liability Company or Sole Proprietorship and the business has no employees.)

Employers Liability covers an employer's liability for bodily injury to employees occurring within the scope of their employment when that liability is not covered by workers' compensation. This coverage generally applies when an employee alleges that the employer's negligence or failure to provide a safe workplace was the cause of the employee's injury or illness. Employer's liability is normally provided in conjunction with the workers' compensation coverage in a single unified policy.

In situations where the contractor / vendor will be engaged in operations / services on Ivy Tech owned property, the contractor / vendor will be required to carry Workers' Compensation and Employer's Liability insurance. It is the responsibility of the contractor / vendor to provide proof/documentation that they are exempt from statutory requirements of having Workers' Compensation insurance, if they qualify for such.

## BUSINESS AUTOMOBILE LIABILITY

Business Automobile Liability insurance covers the liabilities assumed by a business when the type of motor vehicles required to be licensed for operation on public roads are used in the course of their business activities. In situations where the contracting party will be utilizing motor vehicles (owned, hired or borrowed) to perform operations/provide services on Ivy Tech owned property, the contracting party will be required to carry Business Automobile Liability insurance. If the contractor / vendor will be transporting hazardous substances or passengers for hire, they must meet all State and Federal licensing requirements. Depending on the type and amount of hazardous materials transported, the contractor / vendor may be subject to the Motor Carrier Act of 1980 and be required to provide proof of required financial responsibility. Proof of financial responsibility may be in the form of a Motor Carrier Act endorsement (MCS-90) to their liability insurance policy, a Motor Carrier surety bond or written authorization from the Federal Motor Carrier Safety Administration to self-insure the requirement. In those situations, the limits of liability required will be in accordance with 49 CFR 387.7

## UMBRELLA / EXCESS LIABILITY

Umbrella / Excess Liability insurance provides additional coverage limits over a primary (GL) insurance policy. Excess Liability only applies to a single policy. An Umbrella Liability policy can apply to multiple policies. A standard umbrella liability policy generally provides additional limits to a business's Commercial General Liability, Business Automobile Liability and Employer's Liability policies.

A contractor / vendor's Primary and Excess / Umbrella Liability limits can be added together to meet Central Office Risk Management's minimum required limit(s) for an individual line of coverage. For example, if the contractor / vendor is required to carry \$2m in Commercial General Liability limits and the insurance certificate shows \$1m Commercial General Liability and \$1m or more in Umbrella Liability limits, this would comply with the required \$2m limit.

The minimum required limits may be increased if the scope and/or risk associated with the contractor/vendor activities are greater than usual Ivy Tech activities/projects.

### III. OTHER LINES OF INSURANCE COVERAGE

Certain types of contracts and activities will result in additional required insurance coverages for the contractors / vendors performing them. The additional coverages include but are not limited to:

#### PROPERTY INSURANCE

Property insurance reimburses the policyholder for damage to or theft of their real and personal property (buildings, contents and other items of property not specifically excluded). It can also protect against extra expenses and lost business income resulting from the damage to or theft of insured property.

Requirements to carry property insurance will generally be limited to lease agreements with commercial tenants. The tenant will be required to carry "Broad Form" property insurance to all property of the tenant, including all improvements and betterments made to the building by the tenant, in an amount equal to the replacement cost value of the property. Property insurance is also required of the contractor/vendor if they will have care, custody or control of Ivy Tech-owned personal property (equipment, computers, laptops, printers, etc.)

Ivy Tech's Property Insurance does not respond to losses for non-owned property (borrowed, leased, etc.) unless the College has assumed liability by way of a written contract or agreement.

#### POLLUTION LIABILITY INSURANCE

If the contracting party engages in a business that works with or uses a material, produces a product or waste considered to be a "hazardous material or waste" under and local, state or federal law / regulation, (which includes but is not limited to: flammable explosives, radioactive materials, known carcinogenic materials, volatile chemicals and biological contaminants) they will be required to carry Pollution Liability insurance coverage. The policy must cover the Contractor's completed operations. This insurance must include sudden and gradual coverage for third-party liability including defense costs and completed operations. The coverage must be maintained during the term of the contract/lease and at least three (3) years following its completion / termination.

#### PROFESSIONAL LIABILITY / ERRORS AND OMISSIONS INSURANCE

Certain types of contractors / vendors perform activities that are highly specialized professional services and are not fully covered under a Commercial General Liability policy. In addition to the four basic coverages previously described, these contractors / vendors will be required to carry Professional / Errors and Omissions Liability insurance. Contractors / vendors that are required to carry Professional / Errors and Omissions Liability insurance include but are not limited to: Law Firms, Architects, Medical Professionals, Environmental Consultants, Engineers, Security Companies, Accountants, Investment Managers and Insurance Brokers.

The liability exposures created by an improper act, error or omission in the performance of professional services can be very significant. Without insurance, nearly all professional contractors / vendors would not be able to meet their indemnification obligations when a significant loss occurs. Were this to occur, Ivy Tech would have no readily available source of funding to compensate for the financial loss created by the contractor / vendors actions and would have to pay for the unbudgeted loss out of the operating funds intended to support the educational mission of the College. The coverage must be maintained during the term of the contract/lease and at least three (3) years following its completion / termination.

## CRIME INSURANCE

When a contractor / vendor's services include handling or having access to Ivy Tech money, securities and other negotiable instruments, the contractor / vendor will be required to have a Commercial Crime (Fidelity) policy or if they are a financial institution, a Financial Institution Bond.

## CONTRACT BONDS

Contract Bonds provide a financial guarantee that a contractor / vendor will provide the service or product promised in a contract. The most common type is a Performance Bond. A Performance Bond provides a financial guarantee that the contractor / vendor will provide the service / product per the terms agreed to in the contract. Ivy Tech will generally require Performance Bonds for construction projects valued at greater than \$1,000,000.

## **IV. CERTIFICATES OF INSURANCE AND POLICY ENDORSEMENTS:**

A Certificate of Insurance (COI) is a simple, standardized way of documenting proof of insurance coverages. A COI serves to identify the key information about the contractor's / vendors insurance. Ivy Tech Community College will accept a properly completed ACORD 25 (liability) and ACORD 28 (commercial property) Certificate of Insurance forms as sufficient proof of insurance.

In order to assure that Ivy Tech has been properly afforded additional insured status on a contractor's/ vendor's policy, it is required that the contractor / vendor supply a copy of their 'Additional Insured-Owners, Lessees or Contractors' Endorsement stating, "Ivy Tech Community College of Indiana is Additional Insured as their interests may appear relating to (*Insert the name of the service/ project or product*)".

Prior to finalizing the contract, the contractor / vendor will be required to deliver the COI and endorsement evidencing the required coverages and limits to the Contract Originator within Ivy Tech Community College. The COI should provide for:

- a. Coverages represented on the certificate must show policy numbers, policy dates and limits.
- b. With the exception of Workers' Compensation and Professional Liability coverage, the COI must state that "Ivy Tech Community College of Indiana is Additional Insured as their interests may appear relating to (*Insert the name of the service/ project or product*)" This language must appear in the COI section entitled DESCRIPTION OF OPERATIONS/ LOCATIONS/VEHICLES)
- c. A minimum of thirty (30) days written notice of cancellation, non-renewal or material restriction of coverage terms or limits from the insurance company.

## **V. OTHER KEY CONSIDERATIONS**

### GOVERNMENTAL TORT IMMUNITY

Ivy Tech enters into many contracts with governmental (States, Cities, Towns, etc.) and quasi-governmental entities (Housing Authorities, Transit Authorities, other Colleges/Universities, etc.). Governmental entities may be immune from carrying insurance or they may carry a deductible/retention greater than \$100K on any of our required coverage. If this situation arises, General Counsel's Office should be consulted to determine the most appropriate course of action for the College.

## LOSS DOCUMENTATION AND INVESTIGATION

In the event of an insurance claim or lawsuit arising from the improper performance or failure to perform the requirements of a contract, the Ivy Tech department that initiated the contract must cooperate with Central Office Risk Management and General Counsel's Office in securing all needed information and documentation concerning the contract. Also, to the extent possible, the Ivy Tech department that initiated the contract will help to secure the cooperation of the contractor / vendor in adjudicating an insurance claim.

**IVY TECH COMMUNITY COLLEGE MINIMUM INSURANCE REQUIREMENTS MATRIX**

<b>FINANCE</b>	<b>General Liability</b>	<b>Professional Liability</b>	<b>Automobile Liability</b>	<b>Workers' Compensation</b>	<b>Umbrella</b>	<b>Crime</b>	<b>Environmental/Pollution Liability</b>
Accountant (bookkeeping services)	\$1,000,000	\$1,000,000	A	B	C	\$10,000,000	N/A
Accountant (accounts receivable)	\$1,000,000	\$1,000,000	A	B	C	\$10,000,000	N/A
Financial Advisor / Asset Management	\$1,000,000	\$10,000,000	A	B	C	\$10,000,000	N/A
Financial Advisor / Tax Consultant	\$1,000,000	\$10,000,000	A	B	C	D	N/A
<b>CONSTRUCTION &amp; BUILDING RELATED SERVICES</b>	<b>General Liability</b>	<b>Professional Liability</b>	<b>Automobile Liability</b>	<b>Workers' Compensation</b>	<b>Umbrella</b>	<b>Crime</b>	<b>Environmental/Pollution Liability</b>
Architect (interior design services)	\$1,000,000	\$1,000,000	A	B	C	D	N/A
Architect (structural integrity audits)	\$1,000,000	\$2,000,000	A	B	C	N/A	N/A
Architect (building structural design)	\$1,000,000	\$5,000,000	A	B	C	N/A	N/A
Asbestos Abatement	\$5,000,000	N/A	A	B	C	N/A	\$10,000,000
Boiler / Chiller Installations	\$5,000,000	N/A	A	B	C	N/A	N/A
Cleaning	\$1,000,000	N/A	A	B	C	N/A	N/A
Construction Project Management	\$1,000,000	\$10,000,000	A	B	C	D	N/A
Debris Removal (hauling companies)	\$5,000,000	N/A	A	B	C	N/A	N/A
Hazardous Materials Removal (hauling companies)	\$5,000,000	N/A	A	B	C	N/A	\$10,000,000
Electricians	\$2,000,000	N/A	A	B	C	N/A	N/A
Elevator Work	\$5,000,000	N/A	A	B	C	N/A	N/A
Engineer (licensed-all types)	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Environmental Consultant Phase I ESA	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A

**INSURANCE REQUIREMENTS GUIDE:**

- A. Automobile Liability insurance is required for contractors / vendors where they transport Ivy Tech property, transport Ivy Tech employees or use of a vehicle is integral to the performance of the contract. The minimum required limit is \$1,000,000 Combined Single Limit. If the vehicle being used has a Gross Vehicle Weight Rating of Class 6-8 /US DOT "VIUS" rating of "Heavy Duty" (19,501+ lbs.), the requirement increases to \$2,000,000. If the vehicle being used can carry more than 12 persons (including driver), the requirement increases to \$3,000,000.
- B. Employers Liability limits are \$500,000 per each occupational accident /\$500,000 per each occupational disease and \$1,000,000 policy aggregate. If the contractor / vendor is performing hazardous activities such as building demolition, asbestos abatement or hazardous waste clean-up, the requirement increases to \$1,000,000 per each occupational accident /\$1,000,000 per each occupational disease and \$5,000,000 policy aggregate.
- C. Any contractor / vendor that is required to have GL, AL and WC is also required to have an Umbrella policy with a minimum limit of \$1,000,000. Any contractor/vendor that is required to maintain General Liability and/or Auto Liability insurance and does not meet the minimum College requirements may elect to obtain an Umbrella policy in an amount that is consistent with the indicated College minimum requirement; this is in lieu of increasing each policy's dollar threshold(s).
- D. Crime coverage will be required if the contractor / vendor directly handles or has access to computer systems that administer Ivy Tech money, securities or other negotiable instruments.
- E. If the contractor / vendor can satisfactorily document that their professional liability coverage is contained in their General Liability policy, a separate Professional liability policy is not required.

**IVY TECH COMMUNITY COLLEGE MINIMUM INSURANCE REQUIREMENTS MATRIX**

Environmental Consultant Phase II ESA	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
<b>CONSTRUCTION &amp; BUILDING RELATED SERVICES</b>	<b>General Liability</b>	<b>Professional Liability</b>	<b>Automobile Liability</b>	<b>Workers' Compensation</b>	<b>Umbrella</b>	<b>Crime</b>	<b>Environmental/Pollution Liability</b>
Environmental Consultant Phase III ESA	\$1,000,000	\$5,000,000	A	B	C	N/A	\$5,000,000
Environmental Remediation	\$5,000,000	\$5,000,000	A	B	C	N/A	\$5,000,000
Expeditor	\$1,000,000	\$1,000,000	A	B	C	D	N/A
Exterior Contractors (facades, roofs, sidewalks, concrete work)	\$3,000,000	E	A	B	C	N/A	N/A
Exterminators	\$3,000,000	N/A	A	B	C	N/A	\$1,000,000
HVAC (other than boiler)	\$2,000,000	N/A	A	B	C	N/A	N/A
Intercoms/Cameras/Telecommunications	\$1,000,000	N/A	A	B	C	N/A	N/A
Interior Contractors	\$2,000,000	N/A	A	B	C	N/A	N/A
Landscape Designer	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Landscaping (use of hazardous chemicals)	\$1,000,000	N/A	A	B	C	N/A	\$1,000,000
Landscaping (no hazardous chemicals)	\$1,000,000	N/A	A	B	C	N/A	N/A
Movers	\$2,000,000	N/A	A	B	C	N/A	N/A
Painters / Floor Scraping	\$1,000,000	N/A	A	B	C	N/A	N/A
Plumbers	\$2,000,000	N/A	A	B	C	N/A	N/A
Roof Tanks	\$5,000,000	N/A	A	B	C	N/A	N/A
Scaffolding Companies	\$5,000,000	N/A	A	B	C	N/A	N/A
Suppliers delivering on premises (do not install)	\$1,000,000	N/A	A	B	C	N/A	N/A
Suppliers delivering on premises	\$2,000,000	N/A	A	B	C	N/A	N/A

**INSURANCE REQUIREMENTS GUIDE:**

- A. Automobile Liability insurance is required for contractors / vendors where they transport Ivy Tech property, transport Ivy Tech employees or use of a vehicle is integral to the performance of the contract. The minimum required limit is \$1,000,000 Combined Single Limit. If the vehicle being used has a Gross Vehicle Weight Rating of Class 6-8 /US DOT "VIUS" rating of "Heavy Duty" (19,501+ lbs.), the requirement increases to \$2,000,000. If the vehicle being used can carry more than 12 persons (including driver), the requirement increases to \$3,000,000.
- B. Employers Liability limits are \$500,000 per each occupational accident /\$500,000 per each occupational disease and \$1,000,000 policy aggregate. If the contractor / vendor is performing hazardous activities such as building demolition, asbestos abatement or hazardous waste clean-up, the requirement increases to \$1,000,000 per each occupational accident /\$1,000,000 per each occupational disease and \$5,000,000 policy aggregate.
- C. Any contractor / vendor that is required to have GL, AL and WC is also required to have an Umbrella policy with a minimum limit of \$1,000,000. Any contractor/vendor that is required to maintain General Liability and/or Auto Liability insurance and does not meet the minimum College requirements may elect to obtain an Umbrella policy in an amount that is consistent with the indicated College minimum requirement; this is in lieu of increasing each policy's dollar threshold(s).
- D. Crime coverage will be required if the contractor / vendor directly handles or has access to computer systems that administer Ivy Tech money, securities or other negotiable instruments.
- E. If the contractor / vendor can satisfactorily document that their professional liability coverage is contained in their General Liability policy, a separate Professional liability policy is not required.

**IVY TECH COMMUNITY COLLEGE MINIMUM INSURANCE REQUIREMENTS MATRIX**

(with install)							
<b>INFORMATION TECHNOLOGY</b>	<b>General Liability</b>	<b>Professional Liability</b>	<b>Automobile Liability</b>	<b>Workers' Compensation</b>	<b>Umbrella</b>	<b>Crime</b>	<b>Environmental/Pollution Liability</b>
Data Analysis	\$1,000,000	N/A	A	B	C	D	N/A
Database Analysis	\$1,000,000	E	A	B	C	D	N/A
Database Management	\$1,000,000	\$1,000,000	A	B	C	D	N/A
Network Administration (existing systems)	\$1,000,000	\$1,000,000	A	B	C	D	N/A
Network Development (turnkey services, upgrade for commercial system)	\$1,000,000	\$1,000,000	A	B	C	D	N/A
Programmer	\$1,000,000	\$1,000,000	A	B	C	D	N/A
Software Development (code writing)	\$1,000,000	\$1,000,000	A	B	C	D	N/A
Software Development (customized commercial package)	\$1,000,000	\$1,000,000	A	B	C	D	N/A
Software Development (database design)	\$1,000,000	\$1,000,000	A	B	C	D	N/A
Software Licensing ("off the shelf")	\$1,000,000	N/A	A	B	C	D	N/A
Telecom Administration	\$1,000,000	N/A	A	B	C	D	N/A
Telecom Design	\$1,000,000	\$1,000,000	A	B	C	D	N/A
Web Administrator	\$1,000,000	\$1,000,000	A	B	C	D	N/A
Web Designer	\$1,000,000	\$1,000,000	A	B	C	D	N/A
<b>MEDICAL CONSULTING</b>	<b>General Liability</b>	<b>Professional Liability</b>	<b>Automobile Liability</b>	<b>Workers' Compensation</b>	<b>Umbrella</b>	<b>Crime</b>	<b>Environmental/Pollution Liability</b>
Medical / Dental Services (research support only)	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A

**INSURANCE REQUIREMENTS GUIDE:**

- A. Automobile Liability insurance is required for contractors / vendors where they transport Ivy Tech property, transport Ivy Tech employees or use of a vehicle is integral to the performance of the contract. The minimum required limit is \$1,000,000 Combined Single Limit. If the vehicle being used has a Gross Vehicle Weight Rating of Class 6-8 /US DOT "VIUS" rating of "Heavy Duty" (19,501+ lbs.), the requirement increases to \$2,000,000. If the vehicle being used can carry more than 12 persons (including driver), the requirement increases to \$3,000,000.
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- E. If the contractor / vendor can satisfactorily document that their professional liability coverage is contained in their General Liability policy, a separate Professional liability policy is not required.

**IVY TECH COMMUNITY COLLEGE MINIMUM INSURANCE REQUIREMENTS MATRIX**

Medical Data Analysis	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
<b>MEDICAL CONSULTING</b>	<b>General Liability</b>	<b>Professional Liability</b>	<b>Automobile Liability</b>	<b>Workers' Compensation</b>	<b>Umbrella</b>	<b>Crime</b>	<b>Environmental/Pollution Liability</b>
Medical Testing	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Optic Designer	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Ancillary Professionals (Psychologist, Psychiatrist, Nurse, Respiratory Therapist, Physical Therapist, Massage Therapist)	\$1,000,000	\$1,000,000 / \$1,000,000	A	B	C	N/A	N/A
High Risk Physician Specialties (Obstetrics, Orthopedic Surgery, Neurological Surgery, Emergency Medicine, General Surgery, Thoracic Surgery)	\$1,000,000	\$2,000,000 / \$6,000,000	A	B	C	N/A	N/A
Office Based Physician, Physician Assistant, Nurse Practitioner, Midwife	\$1,000,000	\$1,000,000 / \$3,000,000	A	B	C	N/A	N/A
Psych / Behavior Services (research support only)	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
<b>MANAGEMENT / BUSINESS ADVISORY</b>	<b>General Liability</b>	<b>Professional Liability</b>	<b>Automobile Liability</b>	<b>Workers' Compensation</b>	<b>Umbrella</b>	<b>Crime</b>	<b>Environmental/ Pollution Liability</b>
Curriculum Developer / Director	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Legal (litigation support)	\$1,000,000	\$5,000,000	A	B	C	\$5,000,000	N/A
Legal (Regulatory Compliance, NOC)	\$1,000,000	\$5,000,000	A	B	C	N/A	N/A
Management / Business Consultant (strategic planning, NOC)	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Project Manager	\$1,000,000	N/A	A	B	C	D	N/A

**INSURANCE REQUIREMENTS GUIDE:**

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**IVY TECH COMMUNITY COLLEGE MINIMUM INSURANCE REQUIREMENTS MATRIX**

<b>COMMUNICATIONS</b>	<b>General Liability</b>	<b>Professional Liability</b>	<b>Automobile Liability</b>	<b>Workers' Compensation</b>	<b>Umbrella</b>	<b>Crime</b>	<b>Environmental/Pollution Liability</b>
Advertising Agent (sales)	\$1,000,000	N/A	A	B	C	N/A	N/A
Community Organizer	\$1,000,000	N/A	A	B	C	N/A	N/A
Lobbyist	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Marketing / Promotional Firm	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Public Relations / Communications	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Training (on-site)	\$1,000,000	N/A	A	B	C	N/A	N/A
<b>HUMAN RESOURCES</b>	<b>General Liability</b>	<b>Professional Liability</b>	<b>Automobile Liability</b>	<b>Workers' Compensation</b>	<b>Umbrella</b>	<b>Crime</b>	<b>Environmental/Pollution Liability</b>
Employee Benefits (admin services)	\$1,000,000	\$5,000,000	A	B	C	N/A	N/A
Employee Benefits (design/implement)	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Executive Search Firm	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Seminar Facilitator / Leader	\$1,000,000	N/A	A	B	C	N/A	N/A
<b>PRINT RELATED SERVICES</b>	<b>General Liability</b>	<b>Professional Liability</b>	<b>Automobile Liability</b>	<b>Workers' Compensation</b>	<b>Umbrella</b>	<b>Crime</b>	<b>Environmental/Pollution Liability</b>
Designer	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Editor	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Graphic Designer	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Indexers	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Literary Editor (print, online, or NOC)	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Literary Translators	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Media Producer (audio and video)	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A

**INSURANCE REQUIREMENTS GUIDE:**

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**IVY TECH COMMUNITY COLLEGE MINIMUM INSURANCE REQUIREMENTS MATRIX**

Writer	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
<b>ENTERTAINMENT / EVENT SERVICES</b>	<b>General Liability</b>	<b>Professional Liability</b>	<b>Automobile Liability</b>	<b>Workers' Compensation</b>	<b>Umbrella</b>	<b>Crime</b>	<b>Environmental/Pollution Liability</b>
Actor	\$500,000	N/A	A	B	C	N/A	N/A
Announcer (radio and television)	\$1,000,000	N/A	A	B	C	N/A	N/A
Art Conservator / Curator	\$1,000,000	N/A	A	B	C	N/A	N/A
Artist (all media)	\$1,000,000	N/A	A	B	C	N/A	N/A
Caterer	\$1,000,000	N/A	A	B	C	N/A	N/A
Competition Judge	N/A	N/A	A	B	C	N/A	N/A
Event / Meeting Planner	\$1,000,000	N/A	A	B	C	N/A	N/A
Musician	\$500,000	N/A	A	B	C	N/A	N/A
Photographer / Videographer	\$500,000	N/A	A	B	C	N/A	N/A
Piano / Organ Tuner	\$1,000,000	N/A	A	B	C	N/A	N/A
Video and Audio Editors / Production	\$1,000,000	N/A	A	B	C	N/A	N/A
<b>ALL OTHER (MISC)</b>	<b>General Liability</b>	<b>Professional Liability</b>	<b>Automobile Liability</b>	<b>Workers' Compensation</b>	<b>Umbrella</b>	<b>Crime</b>	<b>Environmental/Pollution Liability</b>
Appraiser	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Archaeologist	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Claims Administrator / Claims Analyst	\$1,000,000	N/A	A	B	C	D	N/A
Institution to Institution Agreement	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Special Events (carnival rides, climbing walls, etc.)	\$2,000,000	N/A	A	B	C	N/A	N/A

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January 2016

**IVY TECH COMMUNITY COLLEGE MINIMUM INSURANCE REQUIREMENTS MATRIX**

<b>ALL OTHER (MISC)</b>	<b>General Liability</b>	<b>Professional Liability</b>	<b>Automobile Liability</b>	<b>Workers' Compensation</b>	<b>Umbrella</b>	<b>Crime</b>	<b>Environmental/ Pollution Liability</b>
Special Events (caterers, amusements, games etc.)	\$1,000,000	N/A	A	B	C	N/A	N/A
Sports Trainer / Coach	\$1,000,000	N/A	A	B	C	N/A	N/A
Translator	\$1,000,000	\$1,000,000	A	B	C	N/A	N/A
Transportation: Livery / Taxi	\$1,000,000	N/A	\$1,000,000	B	C	N/A	N/A
Transportation: Charter Bus						N/A	
(5-10 passengers per vehicle)	\$1,000,000	N/A	\$5,000,000	B	C	N/A	N/A
(11-20 passengers per vehicle)	\$1,000,000	N/A	\$10,000,000	B	C	N/A	N/A
(over 20 passengers per vehicle)	\$1,000,000	N/A	\$20,000,000	B	C	N/A	N/A

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**E-Verify Affidavit**

Pursuant to Indiana Code 22-5-1.7-11, the Contractor entering into a contract with Ivy Tech Community College is required to enroll in and verify the work eligibility status of all its newly hired employees through the E-Verify program. The Contractor is not required to verify the work eligibility status of all its newly hired employees through the E-Verify program if the E-Verify program no longer exists.

The undersigned, on behalf of the Contractor, being first duly sworn, deposes and states that the Contractor does not knowingly employ an unauthorized alien. The undersigned further affirms that, prior to entering into its contract with Ivy Tech Community College, the undersigned Contractor will enroll in and agrees to verify the work eligibility status of all its newly hired employees through the E-Verify program.

(Contractor): \_\_\_\_\_

By (Written Signature): \_\_\_\_\_

(Printed Name): \_\_\_\_\_

(Title): \_\_\_\_\_

*Important - Notary Signature and Seal Required in the Space Below*

STATE OF \_\_\_\_\_

SS:

COUNTY OF \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_,  
20 \_\_\_\_.

My commission expires: \_\_\_\_\_ (Signed) \_\_\_\_\_

a. Residing in \_\_\_\_\_ County, State of \_\_\_\_\_



## SUPPLIER DIVERSITY INFORMATION

This information is not applicable to my business, firm or corporation.

Ivy Tech Community College of Indiana encourages respondents to this RFP to become involved in our Supplier Diversity Program. The Supplier Diversity Program tracks businesses that qualify as Minority (MBE), Small Disadvantaged Business (SDB), Women-Owned Business Enterprises (WBE), HubZone, or Veteran Owned Business Enterprises.

To qualify as one of the above business classifications, your company must be at least 51% owned, controlled and actively managed by a person in one of the categories listed above.

State your company's status per categories below:

_____	Small Business	_____	WBE
_____	SOB	_____	HubZone
_____	MBE	_____	Historically Black
_____	Service Disabled Veteran Owned	_____	College/University
			Veteran Owned

---

Does the Participant's business currently have a Supplier Diversity Program in place? Yes  No

If the Participant answered "yes", please provide the name and telephone number of the Participant's Program Coordinator

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Identify all Second Tier Business Relationships or First Tier Business Relationships Supplier has with Minority-Owned, Women-Owned, HubZone, Veteran-Owned and Small Disadvantaged Businesses. (1st Tier is defined as -- Any supplier, regardless of type or size, which has a direct contract with Ivy Tech Community College of Indiana. 2nd Tier is defined as -- Any supplier, regardless of type or size, which is contracted through a 1st tier supplier to Ivy Tech Community College of Indiana.)

Name: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Title: \_\_\_\_\_  
Company: \_\_\_\_\_  
Date: \_\_\_\_\_

**-PLEASE ATTACH CERTIFICATION WITH COMPLETED FORM-**

**SECTION 00 1113 - ADVERTISEMENT FOR BIDS**

Notice is hereby given that sealed proposals will be received:

BY: Ivy Tech Community College – Sellersburg Campus  
8204 Highway 311  
Sellersburg, IN 47172

FOR: Ogle Hall AV Upgrades

AT: Submit via email to: [Kyle.Wilson@TowerPinkster.com](mailto:Kyle.Wilson@TowerPinkster.com)

UNTIL: 10:30 AM (project local time)

DATE: Tuesday June 30, 2026

Proposals received after the hour and date set for receiving of proposals, will be returned unopened.

All work will be awarded under a single General Contract.

Proposals shall be executed on the Contractor's Bid for Public Works, Form 96 (Revised 2013), Parts I and II, in full accordance with the Proposal Documents, which are on file with the Owner and Architect and may be examined by Bidders at the following locations:

Ivy Tech Community College – Sellersburg Campus  
8204 Highway 311  
Sellersburg, IN 47172  
812.246.3301 (p)

TowerPinkster  
320 Pearl Street, Suite 100  
New Albany, IN 47150  
812-282-9554 p

Bidders shall provide a financial statement complying with Section III of Form No. 96. Supplemental Bid Form (Document 004113), a satisfactory Bid Bond, or certified check pursuant to I.C. 35-1-12-4.5, payable to: Ivy Tech Community College.

Bids shall be submitted on forms provided in this Project Manual.

The Architect retains all copyright to the bid documents, as instruments of their professional service. Bidders, or any other persons, may not use the PDF files for any other purpose than preparing a bid for this project.

Where trade names, brand names, or manufacturers' names are used in this Project Manual, it is for the purpose of establishing kind and quality and not for the purpose of limiting competition. Bidders may offer items or materials equal in quality and having the same durability and efficiency if the Bidder first receives written approval from the Architect/Engineer prior to the date/time of the Bid opening and complying with the requirements indicated in the Notice to Bidders. The Bidder shall identify such substitutions by name, kind, and type with the bid.

General Contractors shall certify on the Proposal Form that they have obtained a complete set of construction documents, including all Drawings, Specifications and Addenda, and have reviewed the jobsite to sufficiently familiarize themselves with the existing conditions. Site visits can be coordinated with the Owner: Craig Staley, Director of Facilities; 812-246-3301 extension 134729.

**PROJECT NO. 26064.003  
IVY TECH COMMUNITY COLLEGE - OGLE HALL AV UPGRADES  
IVY TECH COMMUNITY COLLEGE**

**ADVERTISEMENT FOR BIDS  
00 1113 - 2  
06/08/2026**

All questions and requests for substitutions shall be directed to:

TowerPinkster Contact Person  
Kyle Wilson – Principal - Senior Project Architect - TowerPinkster  
kyle.wilson@towerpinkster.com

Bid Security in the amount of ten percent (10%) of the Proposal, including all add alternates must accompany each Proposal in accordance with the Instructions to Bidders.

The Owner reserves the right to accept or reject any bid and to waive any irregularities in bidding.  
The Base Bid may be held for a period not to exceed Forty-Five (45) days before awarding Contracts.

Should a successful Bidder withdraw his bid or fail to execute a satisfactory contract within ten (10) days after notice of acceptance of his bid, the Owner may declare the Bid Security forfeited as liquidated damages, not as penalty.

The successful Bidder shall furnish a Performance Bond and Labor and Materials Payment Bond in an amount equal to one hundred percent (100%) of the Contract Sum with an approved surety company and said bond shall remain in full force and effect for a period of one (1) year after date of final acceptance of the work. The cost of all bonds shall be included in the bid price.

The Contract to which the Owner will be a party will contain a provision prohibiting the other party to the Contract, and their subcontractors, from engaging in employment practice that constitutes a discrimination against a person because of the person's race, color, sex, religion, national origin, or ancestry. The Contractor shall provide an affidavit with each billing, assuring the Owner that this provision has not been violated.

Bidders shall be required to comply with the terms of the State Board of Trustees Resolution 2017-4 (Use of Apprentices in Certain Construction or Remodeling Projects) which is included as a supplement to Division 00 Document "Additional Bidding and Contract Requirements (Ivy Tech Community College). When reviewing this resolution, give special attention to the fact that all contractors, subcontractors, subs-subcontractors with contracts over \$50,000 must submit a Resolution No. 2017-4 statement showing how compliance will be achieved.

The successful Bidder shall be required to comply with the Additional Bidding and Contract Requirements (Ivy Tech Community College) relating to Schedule of Wages, Apprentices and Trainees, Certified Payroll and Drug Testing.

Ivy Tech Community College is committed to equal opportunity without regard to race, religion, physical or mental disability, age, veteran status, color, creed, national origin or sex.

IVY TECH COMMUNITY COLLEGE – SELLERSBURG CAMPUS  
MONDAY JUNE 8, 2026

**END OF SECTION 00 11 13**



# AIA<sup>®</sup> Document A701<sup>™</sup> – 2018

## Instructions to Bidders

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

Ivy Tech Community College - Ogle Hall AV Upgrades

**THE OWNER:**  
(Name, legal status, address, and other information)

Ivy Tech Community College  
8204 Highway 311  
Sellersburg, IN 47172

**THE ARCHITECT:**  
(Name, legal status, address, and other information)

Tower Pinkster Titus Associates, Inc  
320 Pearl Street, Suite 100  
New Albany, IN 47150  
Telephone Number: 812.282.9554

### TABLE OF ARTICLES

- 1 DEFINITIONS
- 2 BIDDER'S REPRESENTATIONS
- 3 BIDDING DOCUMENTS
- 4 BIDDING PROCEDURES
- 5 CONSIDERATION OF BIDS
- 6 POST-BID INFORMATION
- 7 PERFORMANCE BOND AND PAYMENT BOND
- 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

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

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

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612<sup>™</sup>-2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

## ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work.

## ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

- .1 the Bidder has read and understands the Bidding Documents;
- .2 the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
- .3 the Bid complies with the Bidding Documents;
- .4 the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;
- .5 the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
- .6 the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

## ARTICLE 3 BIDDING DOCUMENTS

### § 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.

*(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)*

**§ 3.1.2** Any required deposit shall be refunded to Bidders who submit a bona fide Bid and return the paper Bidding Documents in good condition within ten days after receipt of Bids. The cost to replace missing or damaged paper documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

**§ 3.1.3** Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders.

**§ 3.1.4** Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.

**§ 3.1.5** The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

### **§ 3.2 Modification or Interpretation of Bidding Documents**

**§ 3.2.1** The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

**§ 3.2.2** Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least seven days prior to the date for receipt of Bids.  
*(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)*

**§ 3.2.3** Modifications and interpretations of the Bidding Documents shall be made by Addendum. Modifications and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.

### **§ 3.3 Substitutions**

**§ 3.3.1** The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

#### **§ 3.3.2 Substitution Process**

**§ 3.3.2.1** Written requests for substitutions shall be received by the Architect at least ten days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

**§ 3.3.2.2** Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

**§ 3.3.2.3** If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

**§ 3.3.3** The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

**§ 3.3.4** If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

#### § 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.

*(Indicate how, such as by email, website, host site/platform, paper copy, or other method Addenda will be transmitted.)*

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids, except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Prior to submitting a Bid, each Bidder shall ascertain that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

### ARTICLE 4 BIDDING PROCEDURES

#### § 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter “No Change” or as required by the bid form.

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder’s refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached, certifying the agent’s authority to bind the Bidder.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

#### § 4.2 Bid Security

§ 4.2.1 Each Bid shall be accompanied by the following bid security:

*(Insert the form and amount of bid security.)*

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount

of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. In the event the Owner fails to comply with Section 6.2, the amount of the bid security shall not be forfeited to the Owner.

**§ 4.2.3** If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

**§ 4.2.4** The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected. However, if no Contract has been awarded or a Bidder has not been notified of the acceptance of its Bid, a Bidder may, beginning days after the opening of Bids, withdraw its Bid and request the return of its bid security.

#### **§ 4.3 Submission of Bids**

**§ 4.3.1** A Bidder shall submit its Bid as indicated below:

*(Indicate how, such as by website, host site/platform, paper copy, or other method Bidders shall submit their Bid.)*

**§ 4.3.2** Paper copies of the Bid, the bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address, and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

**§ 4.3.3** Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

**§ 4.3.4** The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

**§ 4.3.5** A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

#### **§ 4.4 Modification or Withdrawal of Bid**

**§ 4.4.1** Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

**§ 4.4.2** Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

**§ 4.4.3** After the date and time designated for receipt of Bids, a Bidder who discovers that it made a clerical error in its Bid shall notify the Architect of such error within two days, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Bid. Upon providing evidence of such error to the reasonable satisfaction of the Architect, the Bid shall be withdrawn and not resubmitted. If a Bid is withdrawn pursuant to this Section 4.4.3, the bid security will be attended to as follows:

*(State the terms and conditions, such as Bid rank, for returning or retaining the bid security.)*

## **ARTICLE 5 CONSIDERATION OF BIDS**

### **§ 5.1 Opening of Bids**

If stipulated in an advertisement or invitation to bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

### **§ 5.2 Rejection of Bids**

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

### **§ 5.3 Acceptance of Bid (Award)**

**§ 5.3.1** It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

**§ 5.3.2** Unless otherwise prohibited by law, the Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

## **ARTICLE 6 POST-BID INFORMATION**

### **§ 6.1 Contractor's Qualification Statement**

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

### **§ 6.2 Owner's Financial Capability**

A Bidder to whom award of a Contract is under consideration may request in writing, fourteen days prior to the expiration of the time for withdrawal of Bids, that the Owner furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. The Owner shall then furnish such reasonable evidence to the Bidder no later than seven days prior to the expiration of the time for withdrawal of Bids. Unless such reasonable evidence is furnished within the allotted time, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

### **§ 6.3 Submittals**

**§ 6.3.1** After notification of selection for the award of the Contract, the Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

- .1 a designation of the Work to be performed with the Bidder's own forces;
- .2 names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and
- .3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

**§ 6.3.2** The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

**§ 6.3.3** Prior to the execution of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, withdraw the Bid or submit an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

**§ 6.3.4** Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

## ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

### § 7.1 Bond Requirements

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.

*(If Payment or Performance Bonds are to be in an amount other than 100% of the Contract Sum, indicate the dollar amount or percentage of the Contract Sum.)*

### § 7.2 Time of Delivery and Form of Bonds

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to commence sooner in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

## ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

§ 8.1 Copies of the proposed Contract Documents have been made available to the Bidder and consist of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor, unless otherwise stated below.  
*(Insert the complete AIA Document number, including year, and Document title.)*
- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds, unless otherwise stated below.  
*(Insert the complete AIA Document number, including year, and Document title.)*
- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction, unless otherwise stated below.  
*(Insert the complete AIA Document number, including year, and Document title.)*
- .4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:  
*(Insert the date of the E203-2013.)*

**.5 Drawings**

<b>Number</b>	<b>Title</b>	<b>Date</b>
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**.6 Specifications**

<b>Section</b>	<b>Title</b>	<b>Date</b>	<b>Pages</b>
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**.7 Addenda:**

<b>Number</b>	<b>Date</b>	<b>Pages</b>
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**.8 Other Exhibits:**

*(Check all boxes that apply and include appropriate information identifying the exhibit where required.)*

AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:  
*(Insert the date of the E204-2017.)*

The Sustainability Plan:

<b>Title</b>	<b>Date</b>	<b>Pages</b>
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Supplementary and other Conditions of the Contract:

<b>Document</b>	<b>Title</b>	<b>Date</b>	<b>Pages</b>
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**.9 Other documents listed below:**

*(List here any additional documents that are intended to form part of the Proposed Contract Documents.)*

## SECTION 00 2213 - SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

The following supplements modify the Instructions to Bidders, AIA Document A701 - 2018, entitled "Instructions to Bidders". Where a portion of the Instruction to Bidders is modified or deleted by these Supplementary Instructions, the unaltered portions of the Instructions To Bidders shall remain in effect.

### 1.1 ARTICLE 9 - SUPPLEMENTARY INSTRUCTIONS

#### 9.1 Article 3 - BIDDING DOCUMENTS, delete the current Paragraph and replace with the following:

3.1.1 All bid documents may be downloaded free of charge in PDF format via the Architect's website as identified in the Notice To Bidders. Any/all desired printing of bid documents, including all costs associated therewith, is to be borne by the bidders. The Architect retains all copyright to all Bid Documents. Bidders may not use the Bid Documents for any purpose except preparing a bid for this project.

#### ***OR SPECIFIER SELECT***

#### 9.1 Article 3 - BIDDING DOCUMENTS, delete the current Paragraph and replace with the following:

3.1.1 All bid documents may be downloaded free of charge in PDF format for viewing, printing and distribution to bidders, sub-bidders and suppliers at the discretion and responsibility of the general contractors. All information is posted on a website identified in the Notice To Bidders or available by contacting the Architect. The Architect retains all copyright to all Bid Documents. Bidders may not use the Bid Documents for any purpose except preparing a bid for this project. Bidders may not distribute Bid Documents to Plan Room services, either electronic or hard copy, without the express written permission of the Architect. Printing of bid documents, including all costs associated therewith, is to be borne by the bidders.

#### ***OR SPECIFIER SELECT***

#### 9.1 Article 3 - BIDDING DOCUMENTS, delete the current Paragraph and replace with the following:

3.1.1 Bid documents are available from a single-source reprographics company named in the Notice To Bidders. Documents may be viewed online and obtained by phone, fax, e-mail or online. The cost of printing and shipping the documents is to be borne by the bidders, therefore, non-refundable. Any special conditions for refundable sets to General Contractors and other bidders are stated in the Notice To Bidders.

#### 9.2 Article 3 - BIDDING DOCUMENTS, delete the current Paragraph and replace with the following:

3.1.2 Bid documents are available to sub-bidders in accordance with Paragraph 3.1.1.

#### 9.3 Article 3 - BIDDING DOCUMENTS, add the following Paragraph:

3.1.5 In the event of any discrepancy between electronic versions and any hard copy, printed versions of the files, the hard copy version on file at the Architect's office will govern.

#### 9.4 Article 3 - BIDDING DOCUMENTS, add the following Paragraph:

3.3.5 When specifications include a list of acceptable manufacturers, it is done for the express purpose of establishing a basis of durability, efficiency, configuration, maintain Owner's maintenance stock, and not for the purpose of limiting competition. These said names establish the products on which the bidder's proposal shall be

based for that particular specification item. Proposed substitutions must be submitted in accordance with Specification Section 01 6200 - Product Options and Substitutions.

- 9.5 **Article 3 - BIDDING DOCUMENTS, delete Paragraph 3.4.3.**
- 9.6 **Bidder shall submit financial statement demonstrating financial capability to complete project, as required by the Proposal Form.**
- 9.7 **Bidder shall submit two (2) copies of all required Bidding Documents.**
- 9.8 **All bidders shall submit Contractor's Bid For Public Works-Form 96, Part I and Part II (Revised 2013), as required by the Proposal Form.**
- 9.9 **Bidders are required to include unit prices on added or deleted work as listed on the Contractor's Bid Form.**

***SPECIFIER CHOOSE APPROPRIATE SECTION BELOW. USE FIRST SECTION IF BONDS ARE REQUIRED.***

- 9.11 **Article 7 – PERFORMANCE BOND AND PAYMENT BOND.**

Under Section 7.1.1, delete the words "If stipulated in the Bidding Documents, the" and substitute the word "The".  
Under Section 7.1.1, add the following sentence: "The costs for all Bonds must be included in the bid price."  
Delete Section 7.1.2 in its entirety.

***OR***

- 9.11 **Article 7 – PERFORMANCE BOND AND PAYMENT BOND, delete Article 7 in its entirety.**
- 9.12 **Materials supplied for this project are exempt from Indiana State Sales Tax. Products purchased from sources outside the State of Indiana may require payment of sales tax to that particular jurisdiction. All costs for such tax will be the responsibility of the Contractor.**
- 9.13 **Electronic submissions of bids are NOT acceptable. This includes fax and e-mail.**

**END OF SECTION 00 2213**

**SECTION 00 4100 - BID FORM**

**THE PROJECT AND THE PARTIES:**

TO: Kalamazoo Public Schools (the Owner)  
600 West Vine Street  
Kalamazoo, Michigan 49007

FOR: Kalamazoo Public Schools

DATE: \_\_\_\_\_ (Bidder to enter date)

SUBMITTED BY: (Bidder to enter name and address)

Bidders Full Name \_\_\_\_\_

Address \_\_\_\_\_

City, State, and Zip \_\_\_\_\_

Phone Number \_\_\_\_\_

Email address \_\_\_\_\_

**OFFER**

Having examined the Place of the Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by Tower Pinkster Titus Associates for the above-mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Sum of:

**BID CATEGORY 1 – Security Cameras (Do Not Include Camera Licenses or Structured Cabling)**

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

in lawful money of the United States of America.

**BID CATEGORY 2 – Structured Cabling** (include required permits)

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

in lawful money of the United States of America.

We have included the required security as required by the Instruction to Bidders.  
All applicable taxes are included in the Bid Sum.  
100% Performance and Payment Bond is included in the Bid Sum.  
All applicable permit costs are included in the Bid Sum.  
Fully executed Document 00 4520 – Familial Statement of Disclosure is attached.  
Fully executed Document 00 4546 – Governmental Certifications form is attached.

**VOLUNTARY ALTERNATES**

Description of voluntary alternates:

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\_\_\_\_\_ Dollars (\$ \_\_\_\_\_ )  
in lawful money of the United States of America.

**ADD OR DELETE**

Bidder shall include add/delete pricing for the following systems and/or components listed below. Include all parts, cables, labor, taxes, performance and payment bond monies or any other associated fees to add or delete to the awarded contract. Do not include camera licenses as they are provided by Kalamazoo Public Schools.

**BID CATEGORY 1 – SECURITY CAMERAS**

Unit price to add or delete one X \$ \_\_\_\_\_

Unit price to add or delete one Y \$ \_\_\_\_\_

**BID CATEGORY 2 – STRUCTURED CABLING**

Structured cabling unit pricing shall include terminations on each end of the cable, certification and labeling. Do not include any raceway. Do not include any patch cords.

Unit price to add or delete one CAT6 Data Cable (100ft length) \$ \_\_\_\_\_

Unit price to add or delete one CAT6 Data Cable (200ft length) \$ \_\_\_\_\_

**OUT-OF-SCOPE LABOR RATE COMMITMENT**

Bidder shall provide commitment for labor rates that would be quoted for out-of-scope work initiated through change-order:

Technician hourly on-site labor rate \$ \_\_\_\_\_

Technician Hourly travel rate \$ \_\_\_\_\_

**OUT-OF-SCOPE PRODUCT MARKUP COMMITMENT**

Bidder shall provide commitment for a stated markup percentage to be used for products used for contract additions out of base-bid scope. Note: unit pricing supplied for base-bid systems shall apply for additions throughout the duration of the project. Markup percentage listed here shall only apply to out-of-scope products.

Out of scope markup % over dealer cost % \_\_\_\_\_

**ACCEPTANCE**

This offer shall be open to acceptance and is irrevocable for thirty days from the bid closing date. If this bid is accepted by the Owner within the time period stated above, we will:

- Execute the Agreement within seven days of receipt of Notice of Award.
- Commence work within seven days after written Notice to Proceed of this bid.

If this bid is accepted within the time stated, and we fail to commence the Work or we fail to provide the required Bond(s), the security deposit shall be forfeited as damages to the Owner by reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.

In the event our bid is not accepted within the time stated above, the required security deposit shall be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders, unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

**CONTRACT TIME**

If this Bid is accepted, we will complete the Work by:

Bid Category 1 – Security Cameras: March 1, 2024

Bid Category 2 – Structured Cabling: March 1, 2024

**ADDENDA**

The following Addenda have been received. The modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Sum.

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**BID FORM SUPPLEMENTS**

We agree to submit the following Supplements to Bid Forms if requested by the Architect within 48 hours after submission of this bid for additional bid information:

Schedule of Values: Include the names of all Subcontractors and the portions of the Work they will perform.

**BID FORM SIGNATURE(S)**

The Corporate Seal of

.....  
(Bidder - print the full name of your firm)

was hereunto affixed in the presence of:

.....  
(Authorized signing officer, Title)

(Seal)

.....  
(Authorized signing officer, Title)

IF THE BID IS A JOINT VENTURE OR PARTNERSHIP ADD ADDITIONAL FORMS OF EXECUTION FOR EACH MEMBER OF THE JOINT VENTURE IN THE APPROPRIATE FORM OR FORMS AS ABOVE.

**END OF DOCUMENT 00 4100**

PROPOSAL FORM: PART I

Form 96 (Revised 2013)

**CONTRACTOR'S BID FOR PUBLIC WORKS**

Prescribed by the State Board of Accounts

CONTRACTORS BID FOR: *Ivy Tech Community College – Sellersburg Campus*  
*Ogle Hall – AV Upgrades*  
*8204 Highway 311*  
*Sellersburg, IN 47172*

PART I

**(Part I to be completed for all bids)**

Date (Month, Day, Year): \_\_\_\_\_

Governmental Unit (Owner): *IVY TECH COMMUNITY COLLEGE – SELLERSBURG CAMPUS*

County: \_\_\_\_\_

Bidder (Firm): \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Telephone No.: \_\_\_\_\_

Fax No.: \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

Agent of Bidder: \_\_\_\_\_

(if applicable)

Pursuant to notices given, the undersigned offers to furnish labor and/or material necessary to complete the public works project of IVY TECH COMMUNITY COLLEGE (Governmental Unit) in accordance with plans and specifications prepared by TowerPinkster and their consultants for the sum of:

BASE BID

Lump Sum \_\_\_\_\_ \$ \_\_\_\_\_

The undersigned further agrees to furnish a bond or certified check with this bid for an amount specified in the notice of the letting. If alternative bids apply, the undersigned submits a proposal for each in accordance with the notice.

ADDENDA

Acknowledges receipt of:

Addendum No. _____ ( ) pages	Dated _____
Addendum No. _____ ( ) pages	Dated _____
Addendum No. _____ ( ) pages	Dated _____
Addendum No. _____ ( ) pages	Dated _____

ALTERNATES

The undersigned also proposes to furnish or to omit all labor and materials necessary to complete work as required by the Alternate Bids, as provided in the specifications as follows:

Alternate No. 1:	<i>Scope of Alternate</i>	\$ _____
Alternate No. 2:	<i>Scope of Alternate</i>	\$ _____
Alternate No. 3:	<i>Scope of Alternate</i>	\$ _____
Alternate No. 4:	<i>Scope of Alternate</i>	\$ _____
Alternate No. 5:	<i>Scope of Alternate</i>	\$ _____

ALLOWANCES

By initialing adjacent to amounts below, bidder acknowledges allowance amounts are included in the forgoing bid:

- Brick Allowance** within the **Base Bid** per Section 01 2113      \$ **XXXXXX** per 1000      initials \_\_\_\_\_
- Landscape Allowance** within the **Base Bid** per Section 01 2113      \$ **XXXXXX**      initials \_\_\_\_\_
- Furniture Allowance** within the **Base Bid** per Section 01 2113      \$ **XXXXXX**      initials \_\_\_\_\_
- Contingency Allowance** within the **Base Bid** per Section 01 2113      \$ **XXXXXX**      initials \_\_\_\_\_

COMPLETION OF WORK

Undersigned guarantees, if awarded contract, to complete the work within \_\_\_\_\_ ( ) calendar days.

COMPLETION OF WORK

Undersigned guarantees, if awarded the contract, to complete the work in accordance with the scheduling and phasing requirements as set forth in Specifications Section 01110 - Summary of Work-Single Contract.

COMPLETION OF WORK

Undersigned guarantees, if awarded the contract, to complete the work in accordance with the scheduling and phasing requirements as set forth in Specifications Section 01 1100 - Summary of Work-Multiple Contracts.

Undersigned further agrees to meet all requirements of the project timing to expedite their work so as to not harm other contractors or schedules of other contractors under separate contract on this project.

DISCRIMINATION

The Contractor and his subcontractors, if any, shall not discriminate against or intimidate any employee, or applicant for employment, to be employed in the performance of this contract, with respect to any matter directly or indirectly related to employment because of race, religion, color, sex, national origin or ancestry. Breach of this covenant may be regarded as a material breach of the Contract.

LIST OF PROPOSED UNIT PRICES

If additional units of material included in the contract are needed, the cost of units must be the same as that shown in the original Contract if accepted by the Governmental Unit. If the bid is to be awarded on a unit basis, the itemization of the units shall be shown on the Proposal Form.

Unit prices shall include the furnishing of all labor, materials, supplies, services, and include all items of cost, overhead and profit for the Contractor and any Subcontractor involved, and shall be used uniformly without modifications, for either additions or deductions for all work performed under the contract.

The Unit Prices as established in accordance with changes in the work, are as follows:

<u>NATURE OF WORK</u>	<u>MEASURE</u>	<u>UNIT OF UNIT PRICE</u>
1. Excavation; earth, trench, machine, including removal from site	Cubic Yard	\$ _____
2. Excavation; earth, trench, hand, including removal from site	Cubic Yard	\$ _____
3. Site Fill; earth, hauled, placed, compacted	Cubic Yard	\$ _____
4. Backfill; hauled, placed, compacted	Cubic Yard	\$ _____
5. Engineered Structural Fill; hauled, placed, compacted	Cubic Yard	\$ _____
6. Trench Rock Removal	Cubic Yard	\$ _____
7. Mass Rock Removal	Cubic Yard	\$ _____
8. Cast-In-Place Concrete; footings/foundations	Cubic Yard	\$ _____
9. Slabs on Grade; smooth finish, mesh reinforcing	Cubic Yard	\$ _____
10. Concrete Block; 8" x 16" x 8"	Each	\$ _____
11. Face Brick; furnished and installed	Thousand	\$ _____

12. Gypsum Drywall; 5/8", Fire Code, hung, taped, smooth finish	Square Foot	\$ _____
13. Epoxy Wall Coating	Square Foot	\$ _____
14. Painting (one coat)	Square Foot	\$ _____
15. Acoustical Ceiling; grid and panels	Square Foot	\$ _____
16. Vinyl Composition Tile	Square Foot	\$ _____
17. Carpeting	Square Foot	\$ _____

CERTIFICATION OF USE OF UNITED STATES STEEL PRODUCTS (if applicable)

I, the undersigned bidder or agent as a contractor on a public works project, understand my statutory obligation to use steel products made in the United States (I.C. 5-16-8-2). I hereby certify that I and all subcontractors employed by me for this project will use U.S. steel products on this project if awarded. I understand that violations hereunder may result in forfeiture of contractual payments.

NON-COLLUSION AFFIDAVIT

The undersigned bidder or agent, being duly sworn on oath, says that he has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by him, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting nor to prevent any person from bidding nor to induce anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding. He further says that no person or persons, firms, or corporation has, have or will receive directly or indirectly, any rebate, fee, gift, commission or thing of value on account of such sale.

GENERAL CONTRACTOR CERTIFICATION

I hereby certify that we have obtained a complete set of construction documents, including all Drawings, Specifications and Addenda, and have reviewed the jobsite to sufficiently familiarize ourselves with the existing conditions.

Dated at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
*(Name of Organization)*

BY \_\_\_\_\_

\_\_\_\_\_  
*(Title of Person Signing)*

OATH AND AFFIRMATION

I hereby affirm under the penalties for perjury that the facts and information contained in the foregoing bid for public works are true and correct.

Dated at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
*(Name of Organization)*

BY \_\_\_\_\_

\_\_\_\_\_  
*(Title of Person Signing)*

ACKNOWLEDGEMENT

STATE OF \_\_\_\_\_  
 COUNTY OF \_\_\_\_\_

PROJECT NO. 26064.003  
IVY TECH COMMUNITY COLLEGE - OGLE HALL AV UPGRADES  
IVY TECH COMMUNITY COLLEGE

PROPOSAL FORM\_PART 1 (FORM 96, REVISED 2013)  
00 4201 - 4  
06/08/2026

Before me, a Notary Public, personally appeared the above-named \_\_\_\_\_ and  
*(Name of Person Signing)*  
swore that the statements contained in the foregoing document are true and correct.  
Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_.

*Notary Public*

My Commission Expires: \_\_\_\_\_  
County of Residence: \_\_\_\_\_

ACCEPTANCE

The above bid is accepted this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_,

subject to the following conditions: \_\_\_\_\_  
\_\_\_\_\_.

Contracting Authority Members:

_____	_____
_____	_____
_____	_____

**END OF SECTION 00 4201**

**SECTION 00 4313 - BID SECURITY FORM**

1.01 PROJECT MANUAL

All requirements of the Project Manual shall apply to this Section.1.02 SCOPE

A. Contractors Bid Security shall be either:

1. Bid Bond.
2. Certified Check.
3. Cashier's Check

B. The Bid Bond, if used, shall be AIA Document A310 - 2010, entitled "Bid Bond".

1. Bond shall be by an acceptable Surety Company licensed to do business in the State of **Indiana**.
2. A copy of this form is bound herewith

C. Bid Security shall be:

1. In an amount equal to five (5) percent of the total lump sum base bid plus (5) percent of all add alternates.
2. Security shall be executed in favor of the Owner.
3. Should the successful Bidder fail to enter into a contract or furnish the required Bonds within ten (10) days from date of notice of award, the Owner may declare the Bidder's Bid Security forfeited and the Security amount retained by the Owner as liquidated damages.

D. Refer to Section 00 4393 - Contractor's Bid Submittal Checklist for requirements as to time of submission.

**END OF SECTION 00 4313**

## Bid Bond

**CONTRACTOR:**

*(Name, legal status and address)*

**SURETY:**

*(Name, legal status and principal place of business)*

**OWNER:**

*(Name, legal status and address)*

Ivy Tech Community College  
8204 Highway 311  
Sellersburg, IN 47172

**BOND AMOUNT: \$****PROJECT:**

*(Name, location or address, and Project number, if any)*

Ivy Tech Community College - Ogle Hall AV Upgrades

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or

**ADDITIONS AND DELETIONS:**

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

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this    day of    ,

_____	_____
<i>(Witness)</i>	<i>(Contractor as Principal)</i> <i>(Seal)</i>
_____	_____
<i>(Witness)</i>	<i>(Title)</i>
_____	_____
	<i>(Surety)</i> <i>(Seal)</i>
_____	_____
<i>(Witness)</i>	<i>(Title)</i>



Init.  
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**SECTION 00 4336 - SUBCONTRACTOR LIST**

1.01 PROJECT MANUAL

- A. All requirements of the Project Manual shall apply to this Section.

1.02 SCOPE

- A. Successful Bidder for each Contract shall submit his complete Subcontractors List for all trades and divisions of work.
- B. After submission of this List and after approval by the Architect/Engineer and Owner, it shall not be changed without written approval by the Owner and Architect/Engineer.
- C. Refer to Section 00 4393 – Contractor's Bid Submittal Checklist for requirements as to time of submission.

1.03 FORM

Provide in Contractor's own format to include the following information:

- A. Description of work or trade.
- B. Company Name.
- C. Company Address.
- D. Company Phone and Fax.
- E. Contact Person.
- F. E-mail Address.
- G. MBE/WBE Status.

**END OF SECTION 00 4336**

SECTION 00 4393 – CONTRACTOR'S BID SUBMITTAL CHECKLIST

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Section Includes:
  - 1. Submittals required at time of bid.
  - 2. Submittals required following bid.

1.02 BID SUBMITTALS

- A. The following items are to be submitted by all bidders for all contracts at the time of bidding:
  - 1. Proposal Form Parts I and II
  - 2. Bid Security
  - 3. Financial Statement (as required by Proposal Form)
- B. Submit **two** copies (one signed original and one copy) of above information.

A.03 POST-BID SUBMITTALS

- A. The following items are to be submitted by each successful bidder for all contracts within twenty-four (24) hours following the time of bidding:
  - 1. Schedule of Values
  - 2. Unit Prices (except where required as part of Proposal Form Part I)
  - 3. Subcontractor List
- B. The following items are to be submitted prior to execution of the Owner-Contractor Agreement:
  - 1. Performance Bond
  - 2. Labor & Material Payment Bond
  - 3. Certificate of Insurance
  - 4. Indiana Certificate of Qualification for Public Works Projects
  - 5. Signed Escrow Agreement
  - 6. Employee Background Check  
(per Section 00 7301-Supplementary General Conditions, Article 13)
  - 7. Employee Drug and Alcohol Testing  
(per Section 00 7301-Supplementary General Conditions, Article 13)
  - 8. Employment Eligibility Verification  
(per Section 00 7301-Supplementary General Conditions, Article 13)
- C. Submit all above items to Architect for review and approval.

**PROJECT NO. 26064.003**

**CONTRACTOR'S BID SUBMITTAL CHECKLIST**

**IVY TECH COMMUNITY COLLEGE - OGLE HALL AV UPGRADES  
IVY TECH COMMUNITY COLLEGE**

**00 4393 - 2  
06/08/2026**

**END OF SECTION 00 4393**

SECTION 00 4546.02 – INDIANA CERTIFICATE OF QUALIFICATIONS FOR PUBLIC WORKS PROJECTS

1.01 PROJECT MANUAL

- A. All requirements of the Project Manual apply to this Section.

1.02 SCOPE

- A. All contractors shall have Indiana Certificate of Qualification for Public Works Projects per Indiana Code IC 5-16-13 prior to submitting a bid.
- B. A “contractor” requiring certification generally refers to a contractor in any contractor tier.
  - 1. “Tier 1 contractor” has a direct contract with the government agency (Owner). This is also known as the “prime contractor” or “general contractor”.
  - 2. “Tier 2 contractor” has a direct contract with a Tier 1 contractor. This is also known as a subcontractor.
  - 3. “Tier 3 contractor” has a direct contract with a Tier 2 contractor. This is also known as a sub-subcontractor.
  - 4. “Lower tier contractor” has a direct contract with a Tier 3 contractor or lower tier contractor
  - 5. A supplier or firm not performing any work on site is not required to be qualified.
- C. A contractor of any tier is EXEMPT from requirements of this section if the total amount of their work awarded is less than Three Hundred Thousand dollars (\$300,000).

1.03 TIER 1 CONTRACTOR

- A. Must contribute a minimum of 15% of the initial contract amount by any combination of items 1, 2 or 3 listed below:
  - 1. Work performed directly by Tier 1 contractor’s employees
  - 2. Materials supplied directly by Tier 1 contractor
  - 3. Services supplied directly by the Tier 1 contractor’s employees

1.04 INSURANCE REQUIREMENTS

- A. Minimum requirements for each individual or firm in any contractor tier:
- B. See Supplementary General Conditions, Section 00 7301, Article 11

1.05 DRUG TESTING

- A. Per Indiana Code, IC-4-13-18

1. Required of all contractors, regardless of tier.
2. Written plan for employee drug testing program that complies with IC-4-13-18

1.06 EMPLOYEE VERIFICATION

- A. Per Indiana Code, IC-22-5-1.7-3
1. Required of all contractors, regardless of tier.
  2. Participate in the E-Verify Program

1.1 1.07 APPRENTICESHIP & TRAINING PROGRAM

- A. Per Indiana Code, IC-5-16-13-12
- B. Contractors with 10 or more employees
1. Provide access to training program applicable to tasks performed in normal course of employment.
  2. Compliance may be accomplished through any of the following:
    - a. Apprenticeship program
    - b. Programs offered by Ivy Tech Community College of Indiana
    - c. Programs offered by Vincennes University
    - d. Programs established by or for the contractor
    - e. Programs offered by an entity sponsored by the US Dept of Labor
    - f. Programs that results in the award of industry recognized portable certification
    - g. Programs approved by US Dept of Transportation or INDOT.
- C. Tier 1 and tier 2 contractors with 50 or more employees
1. Must participate in an apprenticeship or training program which meets the standards of any of the following:
    - a. The US Department of Labor, Bureau of Apprenticeship and Training
    - b. The Indiana Department of Labor
    - c. The US Department of Transportation, Federal Highway Administration
    - d. INDOT

1.08 RECORDS

- A. Per Indiana Code, IC-5-16-13-13
- B. Payroll and related records of a contractor in any contractor tier must be:
1. Preserved by the contractor for a period of three (3) years after completion
  2. Open to inspection by the department of workforce development

**PROJECT NO. 26064.003**

**INDIANA CERTIFICATE OF QUALIFICATIONS FOR PUBLIC WORKS PROJECTS**

**IVY TECH COMMUNITY COLLEGE - OGLE HALL AV UPGRADES**

**00 4546.02 - 3**

**IVY TECH COMMUNITY COLLEGE**

**06/08/2026**

**END OF SECTION 00 4546.02**

**PROJECT NO. 26064.003**

**IVY TECH COMMUNITY COLLEGE - OGLE HALL AV UPGRADES  
IVY TECH COMMUNITY COLLEGE**

**AGREEMENT FORM  
00 5200 - 1  
06/08/2026**

**SECTION 00 5200 - AGREEMENT FORM**

1.01 PROJECT MANUAL

- A. All requirements of the Project Manual shall apply to this Section.

1.02 SCOPE

- A. The agreement shall be AIA Document A101 - 2017, entitled "Standard Form of Agreement Between Owner and Contractor".
  - 1. Where the basis of payment is a stipulated sum.
  - 2. Copy of this form is bound herewith.
- B. This form, when fully executed, becomes a part of the successful Bidder's Contract Documents.

**END OF SECTION 00 5200**

 **AIA** Document A101™ – 2017**Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum**

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

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

Ivy Tech Community College  
8204 Highway 311  
Sellersburg, IN 47172

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

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

Ivy Tech Community College - Ogle Hall AV Upgrades

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

Tower Pinkster Titus Associates, Inc  
320 Pearl Street, Suite 100  
New Albany, IN 47150

The Owner and Contractor agree as follows.

**ADDITIONS AND DELETIONS:**

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

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

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(3B9ADA25)

## TABLE OF ARTICLES

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

### EXHIBIT A INSURANCE AND BONDS

#### ARTICLE 1 THE CONTRACT DOCUMENTS

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

#### ARTICLE 2 THE WORK OF THIS CONTRACT

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

#### ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

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

*(Check one of the following boxes.)*

- The date of this Agreement.
- A date set forth in a notice to proceed issued by the Owner.
- Established as follows:

*(Insert a date or a means to determine the date of commencement of the Work.)*

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

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

#### § 3.3 Substantial Completion

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

Init.

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

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

[ ] By the following date:

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

Portion of Work	Substantial Completion Date
-----------------	-----------------------------

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

**ARTICLE 4 CONTRACT SUM**

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

**§ 4.2 Alternates**

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

Item	Price
------	-------

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

Item	Price	Conditions for Acceptance
------	-------	---------------------------

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

Item	Price
------	-------

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

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

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

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

## ARTICLE 5 PAYMENTS

### § 5.1 Progress Payments

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

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

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

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

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

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

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

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

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

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

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

### § 5.1.7 Retainage

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

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

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

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

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

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

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

## **§ 5.2 Final Payment**

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

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

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

## **§ 5.3 Interest**

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

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

%

## **ARTICLE 6 DISPUTE RESOLUTION**

### **§ 6.1 Initial Decision Maker**

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

**§ 6.2 Binding Dispute Resolution**

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

*(Check the appropriate box.)*

- Arbitration pursuant to Section 15.4 of AIA Document A201–2017
- Litigation in a court of competent jurisdiction
- Other *(Specify)*

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

**ARTICLE 7 TERMINATION OR SUSPENSION**

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

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

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

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

**ARTICLE 8 MISCELLANEOUS PROVISIONS**

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

**§ 8.2** The Owner’s representative:

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

**§ 8.3** The Contractor’s representative:

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

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

**§ 8.5 Insurance and Bonds**

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

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

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

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

§ 8.7 Other provisions:

**ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS**

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction
- .4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:  
*(Insert the date of the E203-2013 incorporated into this Agreement.)*

.5 Drawings

Number	Title	Date
--------	-------	------

.6 Specifications

Section	Title	Date	Pages
---------	-------	------	-------

.7 Addenda, if any:

Number	Date	Pages
--------	------	-------

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

.8 Other Exhibits:

*(Check all boxes that apply and include appropriate information identifying the exhibit where required.)*

Init.

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

The Sustainability Plan:

Title	Date	Pages
-------	------	-------

Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
----------	-------	------	-------

**.9** Other documents, if any, listed below:

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

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

\_\_\_\_\_  
**OWNER** (Signature)

\_\_\_\_\_  
**CONTRACTOR** (Signature)

\_\_\_\_\_  
(Printed name and title)

\_\_\_\_\_  
(Printed name and title)

Init.

**SECTION 00 6113 – CONTRACTOR'S BOND FOR CONSTRUCTION**

1.01 PROJECT MANUAL

All requirements of the Project Manual shall apply to this Section.

1.02 SCOPE

- A. The Performance Bond and Labor and Material Payment Bond shall be AIA Document A312 - 2010, comprised of two sections entitled "Performance Bond" and "Payment Bond".
  - 1. Bonds shall be executed by an acceptable Surety Company licensed to do business in the State of Indiana.
  - 2. A copy of this form is bound herewith.
- B. Bonds shall be executed in an amount equal to one hundred percent (100%) of the contract amount in favor of the Owner conditioned on the full and faithful performance of the contract and full payment of all obligations arising there under.
- C. This form when fully executed becomes a part of the successful bidder's Contract Documents.
- D. The Owner may waive the Performance Bond requirement and accept from the Contractor an irrevocable letter of credit from an Indiana financial institution for an amount equal to one hundred percent (100%) of the Contract Sum. The letter of credit shall remain in full force and effect for a period of one (1) year after date of final settlement.

**END OF SECTION 00 6113**



# AIA® Document A312™ – 2010

## Performance Bond

**CONTRACTOR:**

*(Name, legal status and address)*

**SURETY:**

*(Name, legal status and principal place of business)*

**OWNER:**

Ivy Tech Community College  
8204 Highway 311  
Sellersburg, IN 47172

**CONSTRUCTION CONTRACT**

Date:

Amount: \$

Description:

*(Name and location)*

Ivy Tech Community College - Ogle Hall AV Upgrades

**BOND**

Date:

*(Not earlier than Construction Contract Date)*

Amount: \$

Modifications to this Bond:

**CONTRACTOR AS PRINCIPAL**

Company: *(Corporate Seal)*

Signature: \_\_\_\_\_

Name and

Title:

*(Any additional signatures appear on the last page of this Performance Bond.)*

**SURETY**

Company: *(Corporate Seal)*

Signature: \_\_\_\_\_

Name and

Title:

*(FOR INFORMATION ONLY — Name, address and telephone)*

**AGENT or BROKER:****OWNER'S REPRESENTATIVE:**

*(Architect, Engineer or other party:)*

Email Address:

**ADDITIONS AND DELETIONS:**

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

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

Init.

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User Notes:

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§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

- .1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
- .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
- .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
- .3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

#### § 14 Definitions

§ 14.1 **Balance of the Contract Price.** The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 **Construction Contract.** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 **Contractor Default.** Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

*(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)*

**CONTRACTOR AS PRINCIPAL**

Company: \_\_\_\_\_ *(Corporate Seal)*  
Signature: \_\_\_\_\_

Name and Title: \_\_\_\_\_  
Address: \_\_\_\_\_

**SURETY**

Company: \_\_\_\_\_ *(Corporate Seal)*  
Signature: \_\_\_\_\_

Name and Title: \_\_\_\_\_  
Address: \_\_\_\_\_

Init.

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**AIA**<sup>®</sup>

# Document A312™ – 2010

## Payment Bond

**CONTRACTOR:**

*(Name, legal status and address)*

**SURETY:**

*(Name, legal status and principal place of business)*

**OWNER:**

Ivy Tech Community College  
8204 Highway 311  
Sellersburg, IN 47172

**CONSTRUCTION CONTRACT**

Date:

Amount: \$

Description:

*(Name and location)*

Ivy Tech Community College - Ogle Hall AV Upgrades

**BOND**

Date:

*(Not earlier than Construction Contract Date)*

Amount: \$

Modifications to this Bond:

**CONTRACTOR AS PRINCIPAL**

Company: *(Corporate Seal)*

Signature: \_\_\_\_\_

**SURETY**

Company: *(Corporate Seal)*

Signature: \_\_\_\_\_

Name and \_\_\_\_\_

Title:

*(Any additional signatures appear on the last page of this Payment Bond.)*

Name and \_\_\_\_\_

Title:

*(FOR INFORMATION ONLY — Name, address and telephone)*

**AGENT or BROKER:**

**OWNER'S REPRESENTATIVE:**

*(Architect, Engineer or other party:)*

**ADDITIONS AND DELETIONS:**

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

Email Address:

Init.

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User Notes:

(3B9ADA1A)

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- .2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

**§ 10** The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

**§ 11** The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

**§ 12** No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

**§ 13** Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

**§ 14** When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

**§ 15** Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

## **§ 16 Definitions**

**§ 16.1 Claim.** A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

**§ 16.2 Claimant.** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

**§ 16.3 Construction Contract.** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

**§ 16.4 Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

**§ 16.5 Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

**§ 17** If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

**§ 18** Modifications to this bond are as follows:

*(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)*

**CONTRACTOR AS PRINCIPAL**

Company: \_\_\_\_\_ *(Corporate Seal)*  
Signature: \_\_\_\_\_

Name and Title: \_\_\_\_\_  
Address: \_\_\_\_\_

**SURETY**

Company: \_\_\_\_\_ *(Corporate Seal)*  
Signature: \_\_\_\_\_

Name and Title: \_\_\_\_\_  
Address: \_\_\_\_\_

**SECTION 00 7200 - GENERAL CONDITIONS**

1.1 PROJECT MANUAL

- A. All requirements of the Project Manual shall apply to this Section.

1.2 SCOPE

- B. A. The General Conditions shall be AIA Document A201 - 2017, entitled "General Conditions of the Contract for Construction".
  - 1. 1. A copy of which is bound herewith.

**END OF SECTION 00 7200**



# AIA<sup>®</sup> Document A201<sup>™</sup> – 2017

## General Conditions of the Contract for Construction

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

Ivy Tech Community College - Ogle Hall AV Upgrades

**THE OWNER:**  
(Name, legal status and address)

Ivy Tech Community College  
8204 Highway 311  
Sellersburg, IN 47172

**THE ARCHITECT:**  
(Name, legal status and address)

Tower Pinkster Titus Associates, Inc  
320 Pearl Street, Suite 100  
New Albany, IN 47150

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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<sup>™</sup>, Guide for Supplementary Conditions.

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(3B9ADA21)

14 TERMINATION OR SUSPENSION OF THE CONTRACT

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

#### § 1.1.2 The Contract

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

#### § 1.1.3 The Work

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

#### § 1.1.4 The Project

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

#### § 1.1.5 The Drawings

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

#### § 1.1.6 The Specifications

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

#### § 1.1.7 Instruments of Service

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

#### § 1.1.8 Initial Decision Maker

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

### § 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent

consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

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

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

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

### **§ 1.3 Capitalization**

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

### **§ 1.4 Interpretation**

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

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

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

**§ 1.5.2** The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

### **§ 1.6 Notice**

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

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

### **§ 1.7 Digital Data Use and Transmission**

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

## § 1.8 Building Information Models Use and Reliance

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

## ARTICLE 2 OWNER

### § 2.1 General

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

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

### § 2.2 Evidence of the Owner's Financial Arrangements

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

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

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

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

### § 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements,

assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

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

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

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

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

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

#### **§ 2.4 Owner's Right to Stop the Work**

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

#### **§ 2.5 Owner's Right to Carry Out the Work**

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

### **ARTICLE 3 CONTRACTOR**

#### **§ 3.1 General**

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

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

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

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### § 3.2 Review of Contract Documents and Field Conditions by Contractor

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

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

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

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

### § 3.3 Supervision and Construction Procedures

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

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

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

### § 3.4 Labor and Materials

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

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

**§ 3.4.3** The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

### **§ 3.5 Warranty**

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

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

### **§ 3.6 Taxes**

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

### **§ 3.7 Permits, Fees, Notices and Compliance with Laws**

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

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

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

### **§ 3.7.4 Concealed or Unknown Conditions**

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

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

### **§ 3.8 Allowances**

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

**§ 3.8.2** Unless otherwise provided in the Contract Documents,

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

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

### **§ 3.9 Superintendent**

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

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

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

### **§ 3.10 Contractor's Construction and Submittal Schedules**

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

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

Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

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

### **§ 3.11 Documents and Samples at the Site**

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

### **§ 3.12 Shop Drawings, Product Data and Samples**

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

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

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

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

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

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

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

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

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

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

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

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

### **§ 3.13 Use of Site**

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

### **§ 3.14 Cutting and Patching**

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

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

### **§ 3.15 Cleaning Up**

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

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

### § 3.16 Access to Work

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

### § 3.17 Royalties, Patents and Copyrights

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

### § 3.18 Indemnification

**§ 3.18.1** To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

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

## ARTICLE 4 ARCHITECT

### § 4.1 General

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

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

### § 4.2 Administration of the Contract

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

**§ 4.2.2** The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site 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.

**§ 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

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Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

#### § 4.2.4 Communications

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

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

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

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

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

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

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

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

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations

and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

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

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

## **ARTICLE 5 SUBCONTRACTORS**

### **§ 5.1 Definitions**

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

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

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

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

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

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

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

### **§ 5.3 Subcontractual Relations**

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

prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

#### **§ 5.4 Contingent Assignment of Subcontracts**

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

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

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

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

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

### **ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**

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

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

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

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

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

#### **§ 6.2 Mutual Responsibility**

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

**§ 6.2.2** If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work,

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

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

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

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

### **§ 6.3 Owner's Right to Clean Up**

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

## **ARTICLE 7 CHANGES IN THE WORK**

### **§ 7.1 General**

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

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

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

### **§ 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.

### **§ 7.3 Construction Change Directives**

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

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

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

Init.

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

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

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

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

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

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

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

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

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

#### § 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will

affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

## **ARTICLE 8 TIME**

### **§ 8.1 Definitions**

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

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

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

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

### **§ 8.2 Progress and Completion**

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

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

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

### **§ 8.3 Delays and Extensions of Time**

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

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

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

## **ARTICLE 9 PAYMENTS AND COMPLETION**

### **§ 9.1 Contract Sum**

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

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

### **§ 9.2 Schedule of Values**

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

unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

### **§ 9.3 Applications for Payment**

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

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

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

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

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

### **§ 9.4 Certificates for Payment**

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

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

## § 9.5 Decisions to Withhold Certification

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

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

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

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

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

## § 9.6 Progress Payments

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

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

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

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

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

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

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

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

### **§ 9.7 Failure of Payment**

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

### **§ 9.8 Substantial Completion**

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

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

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

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

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

## **§ 9.9 Partial Occupancy or Use**

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

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

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

## **§ 9.10 Final Completion and Final Payment**

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

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

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

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

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

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

## **ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY**

### **§ 10.1 Safety Precautions and Programs**

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

### **§ 10.2 Safety of Persons and Property**

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

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

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

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

**§ 10.2.4** When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

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

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

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

### § 10.2.8 Injury or Damage to Person or Property

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

### § 10.3 Hazardous Materials and Substances

**§ 10.3.1** The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

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

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

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

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

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

### § 10.4 Emergencies

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

## ARTICLE 11 INSURANCE AND BONDS

### § 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

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

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

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

### § 11.2 Owner's Insurance

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

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

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

### § 11.3 Waivers of Subrogation

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

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

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

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

### § 11.5 Adjustment and Settlement of Insured Loss

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

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

## ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

### § 12.1 Uncovering of Work

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

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to

the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

## **§ 12.2 Correction of Work**

### **§ 12.2.1 Before Substantial Completion**

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

### **§ 12.2.2 After Substantial Completion**

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

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

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

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

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

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

## **§ 12.3 Acceptance of Nonconforming Work**

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

## **ARTICLE 13 MISCELLANEOUS PROVISIONS**

### **§ 13.1 Governing Law**

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

## § 13.2 Successors and Assigns

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

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

## § 13.3 Rights and Remedies

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

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

## § 13.4 Tests and Inspections

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

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

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

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

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

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

## § 13.5 Interest

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

## ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

### § 14.1 Termination by the Contractor

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

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

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

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

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

### § 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

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

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

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

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

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance,

the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

#### **§ 14.3 Suspension by the Owner for Convenience**

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

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

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

#### **§ 14.4 Termination by the Owner for Convenience**

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

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

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

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

### **ARTICLE 15 CLAIMS AND DISPUTES**

#### **§ 15.1 Claims**

##### **§ 15.1.1 Definition**

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

##### **§ 15.1.2 Time Limits on Claims**

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

##### **§ 15.1.3 Notice of Claims**

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

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

#### **§ 15.1.4 Continuing Contract Performance**

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

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

#### **§ 15.1.5 Claims for Additional Cost**

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

#### **§ 15.1.6 Claims for Additional Time**

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

**§ 15.1.6.2** If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

#### **§ 15.1.7 Waiver of Claims for Consequential Damages**

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

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

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

#### **§ 15.2 Initial Decision**

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

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

Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

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

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

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

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

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

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

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

### **§ 15.3 Mediation**

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

**§ 15.3.2** The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

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

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

#### § 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

#### § 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

**SECTION 00 7301 - SUPPLEMENTARY GENERAL CONDITIONS**

Unless otherwise provided in these Supplemental Conditions, all work shall be governed by the terms of AIA Document A201 - 2017, entitled "General Conditions of the Contract for Construction". The following Supplemental Conditions, modify, delete from and add to AIA A201. Where an Article Paragraph, Subparagraph or Clause of AIA A201 is modified, deleted from or added to by these Supplemental Conditions, the unaltered provisions of that Article, Paragraph, Subparagraph or Clause shall remain in full force and effect. To the extent that there is any conflict or ambiguity between AIA A201 and these Supplemental Conditions, then these Supplemental Conditions shall control.

**ARTICLE 1 - GENERAL PROVISIONS**

**1.1.1 THE CONTRACT DOCUMENTS**

Add the following:

The Contract Documents also include the following bid documents:

1. Proposal Form (Form 96, Part I and II) – Contractor’s Bid for Public Works.
1. Proposal Form.

**1.1.5 THE DRAWINGS**

Add the following Paragraphs:

- 1.1.5.1 The Drawings are a graphic representation intended to convey the design intent of the Project. They are a 2-dimensional representation of a 3-dimensional Project, and they do not provide a detail for every construction condition of the project. The Drawings are a small-scale representation of complex construction assemblies and components, and not every element of the Project can be indicated in these small scale representations. The Drawings are not an instruction manual, nor are they assembly instructions. They are meant for use by experienced, competent construction professionals with the ability to read, interpret, co-ordinate, interpolate and infer information from them. The Drawings do not indicate every component and assembly necessary to construct the Project. It is the Contractor’s responsibility to provide all components and assemblies necessary to provide a safe, complete and finished Project, which is reasonably fit for its intended purpose, whether or not such components and assemblies are detailed on the Drawings.
- 1.1.5.2 In general, all drawings are diagrammatic and schematic, and cannot indicate every offset, fitting, and accessory, nor can they indicate the field coordination work required to avoid all conflict with other trades. Contractor shall check drawings, shop drawings, and actual equipment of other trades to verify spaces available and make reasonable modifications, as directed, without extra cost to Owner; maintain headroom

and other requirements in all areas; and where such requirements appear inadequate, notify Architect/Engineer before proceeding.

## 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

Add the following sentence to Paragraph 1.2.1:

It is the Contractor's responsibility to provide all work necessary for a complete and finished Project of first class quality. The Contractor will work skillfully, carefully and will perform in all respects in a workmanlike manner.

Add the following Paragraphs 1.2.2.1 and 1.2.3.1:

1.2.2.1 The Drawings are not intended to define the scope of work among various trades, sub-contractors, material suppliers and vendors. The sheet numbering system is for the convenience of the Architect and the Architect's consultants only, and is not intended to define a sub-contractor's or material supplier's scope of work. Information is detailed, described and located at various locations throughout the Drawings. No consideration will be given to requests for change orders which relate to a failure of the Contractor, or the Contractor's sub-contractors and suppliers to obtain and review a complete set of Contract Documents during bidding, nor to maintain a complete set of Contract Documents during construction. Where bidding is separated into a number of different prime contracts, this paragraph applies to each of the separate prime contracts.

1.2.3.1 In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities.

1. The Agreement
2. Addenda, with those of later date having precedence over those of earlier date.
3. The Supplementary Conditions.
4. The General Conditions of the Contract for Construction.
5. Drawings and Specifications.

In the case of an inconsistency between Drawings and Specifications or within either Document not clarified by addendum, the better quality or greater quantity of Work shall be provided in accordance with the Architect's interpretation. The Contractor has a duty to inquire about possible ambiguities and inconsistencies which are patent or obvious during the bidding process and will not receive additional compensation or be excused from resulting difficulties in performance for failure to point out any inconsistencies after that point. In the case of disregard by the Contractor of such inconsistencies and

ambiguities, the Architect may require the Contractor to remove and correct work which has been installed at no additional cost to the Owner.

ARTICLE 2 - OWNER

**2.3 INFORMATION AND SERVICES REQUIRED OF THE OWNER**

- 2.3.4 DELETE Subparagraph 2.3.4 in its entirety and replace with the following:  
Neither the Owner nor the Architect shall be liable for inaccuracies or omissions contained in any surveys for the site of the Project, nor shall any inaccuracies or omissions in such items relieve the Contractor of its responsibility to perform the Work in accordance with the Contract Documents.

ARTICLE 3 - CONTRACTOR

**3.3 SUPERVISION AND CONSTRUCTION PROCEDURES**

- 3.3.4 ADD the following new Subparagraph:

The Contractor shall maintain total control of and shall be fully responsible for the Contractor's employees, agents, representatives, workers, Subcontractors, sub-subcontractors and other such persons or entities, and shall remove from the Site any such persons or entities not in compliance with the Contract Documents as interpreted by the Architect or the Owner. The Contractor shall assure harmonious labor relations at and adjacent to the Site so as to prevent any delays, disruption or interference to the Work. The Contractor shall prevent strikes, sympathy strikes, slowdowns, work interruption, jurisdictional disputes or other labor disputes resulting for any reason whatsoever, from the acts or failure to act, of the employees of the Contractor or any of its Subcontractors material suppliers, or other such persons or entities. The Contractor agrees that it will bind and require all of its Subcontractors, material suppliers and other such persons or entities to agree to all of the provisions of this subparagraph. If the Contractor or any of its Subcontractors, material suppliers or other such persons or entities fail to fulfill any of the covenants set forth in the Subparagraph, the Contractor will be deemed to be in default and substantial violation of the Contract Documents.

**3.5 WARRANTY**

Add the following new Subparagraphs 3.5.3, 3.5.4, 3.5.5, 3.5.6, 3.5.7, 3.5.8, 3.5.9 and 3.5.10

- 3.5.3 For a period of one (1) year from the date of Substantial Completion, the Contractor warrants as provided in Subparagraph 3.5.1 and further warrants to the Owner, and the Architect that (a) all movable or adjustable work shall remain in working order, including hardware, doors, windows, apparatus, machinery, mechanical

and electrical equipment and (b) the Contractor's portion of the Work shall be waterproof and weatherproof in every respect.

- 3.5.4 In addition to all the Contractor warranties and obligations to correct defective Work provided by law or as set forth in any of the Contract Documents, the Contractor agrees, upon notice from the Owner or the Architect, to pay for, and if requested, correct, repair, restore and cure any damage or injury, whenever the same shall occur or appear, resulting from any defects, omissions or failure in workmanship or materials, and indemnify, hold harmless, and defend the Owner against any and all claims, losses, costs, damages and expenses, including attorneys' fees, suffered by the Owner as a result of such damage or injury, whenever such damage or injury shall occur or appear.
- 3.5.5 The commencement and terms of the guarantees and warranties required by the Contract Documents shall not in any manner be affected by any delay in the commencement, progress or completion of the Work, regardless of the cause, therefore.
- 3.5.6 The foregoing guarantees and warranties shall not shorten any longer warranty or liability period provided for by law or in the Contract Documents or otherwise received from the Contractor or any Subcontractor, material supplier or manufacturer, nor supersede the terms of any special warranty given by the Contractor, nor shorten any period of the Contractor's legal liability for defective Work but shall be in addition thereto.
- 3.5.7 Notwithstanding anything to the contrary contained herein with respect to warranties, it is understood and agreed that the foregoing warranties and guarantees shall not affect, limit or impair the Owner's right against the Contractor with regard to latent defects in the Work which do not appear within the applicable warranty period and which could not, by the exercise of reasonable care and due diligence, be ascertained or discovered by the Owner within such warranty period. The Contractor shall correct and cure any such latent defects which are reported to the Contractor by the Owner in writing within ninety (90) days after such latent defect first appears or could, by the exercise of reasonable care and due diligence, be ascertained or discovered by the Owner.
- 3.5.8 Neither the acceptance of any of the Work by the Owner, in whole or in part, nor any payment, either partial or final, by the Owner to the Contractor, shall constitute a waiver by the Owner of any claims against the Contractor for defects in the Work, whether latent or apparent, and no such payment or acceptance of the Work by the Owner shall release or discharge the Contractor of the Contractor's surety, if any, from any such claims for breach of such warranties.
- 3.5.9 Upon completion of the Work, the Contractor shall furnish the Owner with all written warranties, guarantees, operating manuals, all shop drawings and submittals used in the project relative to equipment installed, and if requested by the Architect, a complete set of reproducible drawings with all field changes noted on them relating to the improvements constructed.
- 3.5.10 If required by the Owner or the Architect, the Contractor shall deliver to the Owner a signed affidavit stating that the Work has been constructed in accordance with the Contract Documents. If such affidavit is required,

final payment or a final certificate for payment shall not be tendered until such affidavit has been delivered to the Owner.

**3.6 TAXES**

3.6.1 ADD the following new Subparagraph:

Material and properties purchased by contracts with the Owner that become a permanent part of the structure or facilities constructed are not subject to the Indiana Gross Retail Tax (Sales Tax). The Contractor shall obtain a copy of the Owner's exemption certificate and then issue copies of this certificate to his suppliers when acquiring materials and properties for use on the Project. The Contractor shall enforce this exemption clause for his purchases and for those of his Subcontractors.

**3.8 ALLOWANCES**

Refer to Section 01 2113 - Cash Allowances for further provisions on this subject.

Refer to Section 01 2116- Contingency Allowance for further provisions on this subject.

**3.12 SHOP DRAWINGS, PROJECT DATA AND SAMPLES**

Refer to Section 01 3300 - Submittal Procedures for further provisions on this subject.

**3.13 USE OF SITE**

ADD the following new Subparagraphs 3.13.1 and 3.13.2:

3.13.1 If the Owner requires the contractor to relocate materials or equipment which have been stored on the Site or within the Project, the Contractor shall relocate such materials or equipment at no additional cost to the Owner.

3.13.2 The Contractor is solely responsible for its Site access. The Contractor shall keep all roads, walks, ramps and other areas on and adjacent to the Site in good working order and condition and free from obstructions which might present a hazard to or interference with traffic or the public. When construction operations necessitate the closing of traffic lanes, the Contractor shall be responsible for arranging such closings in advance with the authorities having jurisdiction, the Owner, and adjacent property Owners. The Contractor shall provide adequate barricades, signs and other devices for traffic guides and public safety. Contractor

shall maintain all adjacent streets to that Project in a clean condition and shall clean all dirt and mud from the Project and from such adjacent street on a daily basis.

**3.14 CUTTING AND PATCHING**

Refer to Section 01 7329 - Cutting and Patching for further provisions on this subject.

**3.15 CLEANING UP**

Refer to Section 01 7423 - Cleaning for further provisions on this subject.

ARTICLE 4 – ARCHITECT AND CONSTRUCTION MANAGER

**4.2 ADMINISTRATION OF THE CONTRACT**

ADD the following new Subparagraphs 4.2.2.1 and 4.2.2.2:

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

4.2.2.2 The Owner is entitled to reimbursement from the Contractor for amounts paid to the Construction Manager for site visits made necessary by the fault of the Contractor or by defects or deficiencies in the Work

ARTICLE 6 - CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

**6.2 MUTUAL RESPONSIBILITY**

ADD the following new Subparagraphs 6.2.6 and 6.2.7:

6.2.6 No Contractor, other Contractor, or Subcontractor, shall be entitled or permitted to sue or make a claim against the Owner or the Architect on account of any delay, disruption or acceleration or damage related thereto. If, however, the Owner or the Architect is sued or receives a claim from a Contractor or other Contractor on account of any alleged delay, disruption, interference or acceleration or damage related thereto caused, or alleged to be caused, in whole or in part, by the Contractor, the Contractor shall defend

and indemnify the Owner and the Architect therefore, and reimburse them for their attorney's fees, costs and expenses.

6.2.7 In as much as the completion of the Project within the Contract Time is dependent upon the close and active cooperation of all those engaged therein, it shall be expressly understood and agreed that the Contractor shall lay out and install its Work at such time or times and in such manner as not to delay, interfere, or disrupt the Work of others.

**ARTICLE 7 - CHANGES IN THE WORK**

**7.1 GENERAL**

Add the following new Subparagraphs 7.1.4 and 7.1.5:

7.1.4 Consultants to Architect or Owner:

1. Consultants to Architect or Owner shall have NO authority to modify Contract requirements in the Scope of Work or Contract Time.
2. Consultants to Architect or Owner shall have no direct communication with Contractor or subcontractors, suppliers and vendors to Contractor without the express consent of the Architect.
3. Any direct communication authorized by the Architect shall be for clarifications of the Work only and shall not act to authorize any changes in the Scope of Work, Contract Sum or Contract Time.

7.1.5 The overhead, profit and commission percentages included in a Change Order or Construction Change Directive must not exceed the maximums given at the end of this paragraph, and will be considered to include, but not be limited to, insurance (other than Workman's Compensation Insurance, FICA, Medicare and FUTA), bonds, small tools, incidental job burdens, supervisory expense, project management expense, clerical expense, preparatory expense and general office expense. Workmen's Compensation Insurance, and employment taxes under FICA, Medicare and FUTA are to be itemized separately and no percentage for overhead, profit and commission will be allowed on them. The percentages for overhead, profit and commission will be negotiated and may vary according to the nature, extent and complexity of the work involved, but not to exceed the maximum percentages shown. Not more than three percentages will be allowed regardless of the number of tiers of sub-contractors; that is, the markup on work subcontracted by a subcontractor will be limited to one overhead percentage and one profit percentage in addition to the prime contractor's commission percentage. On proposals covering both increases and decreases in the amount of the contract, the overhead, profit, and where applicable, commission, will be computed on the net change only. On proposals for decreases in the amount of the contract, the overhead and profit shall be added to the decrease in direct cost:

<i>Description</i>	<i>Overhead</i>	<i>Profit</i>	<i>Commission</i>
To Contractor on work performed by other than his/her own forces	0%	0%	10%

To Contractor for that portion of work performed with by his/her own forces	10%	10%	0%
To Sub-contractor for that portion of work performed by his/her own forces	10%	10%	0%

**7.3 CONSTRUCTION CHANGE DIRECTIVES**

Add the following new Subparagraph to 7.3.4.6:

- 7.3.4.6 Amount for overhead and profit as set forth in this Agreement shall be in accordance with the schedule set forth in Article 7.1.5.

**ARTICLE 8 - TIME**

**8.2 PROGRESS AND COMPLETION**

ADD the following Subparagraphs 8.2.4, 8.2.5 and 8.2.6:

- 8.2.4 Whenever it may be useful or necessary for the Owner to do so, the Owner may take possession of the Project or parts thereof at any time that it is determined by the Architect that the Work has been completed to a point where the Owner may occupy or use said Project, or parts thereof, without interference, delay or disruption to the continued execution of the work. The Owner may at such time install furnishings and equipment as it sees fit or may at its discretion hire other Contractors for this purpose. Such use or occupation shall not relieve the Contractor of these warranty obligations as provided in the Contract Documents nor shorten their commencement dates.
- 8.2.5 Except as otherwise provided herein, substantial completion of work shall be within the number of calendar days stated by the Contractor on the Proposal Form and shall become a contract obligation. The time for completion of the work shall be extended for the period of any excusable delay, which term shall include

only those delays directly caused by any of the reasons enumerated in the following subparagraph 8.3.2 and 8.3.3.

- 8.2.6 Completion shall be understood to be substantially complete for the Owner's beneficial occupancy, with only minor "Punch List" items yet to be completed and items such as balancing of heating system, etc., which cannot be completed due to climatic conditions.

### 8.3 DELAYS AND EXTENSIONS OF TIME

DELETE Subparagraph 8.3.1 in its entirety and substitute the following:

- 8.3.1 If the Work is delayed, disrupted, interfered with or constructively accelerated (hereinafter and collectively referred to as "Hindrances") at any time by any act or neglect of the Owner, the Architect, other Contractors or Subcontractors, or any of their employees, or by changes ordered in the Work, fire, unusual delay in transportation, unavoidable casualties, or other cause beyond the Contractor's control as elsewhere provided in the Contract Documents, then the Contract Time shall be increased by Change Order for such reasonable time as the Architect may determine.

DELETE Subparagraph 8.3.3 in its entirety and substitute the following:

- 8.3.3 Whether or not any Hindrance shall be the basis for an increase in the Contract Time, the Contractor shall have no claim against the Owner or the Architect for an increase in the Contract Sum, nor a claim against the Owner or the Architect for a payment or allowance of any kind for damage, loss or expense resulting from any Hindrance. As between the Contractor and the Owner, except for acts constituting intentional or grossly unreasonable interference by the Owner or the Architect with the Contractor's performance of the Work when such acts continue after the Contractor's written notice to the Owner of such interference or disruption, the Contractor shall assume the risk of all Hindrances arising from any and all causes whatsoever, including without limitation, those due to any act or omission of the Owner or the Architect, except only to the extent that an increase to the Contract Time may be due to the Contractor as expressly provided for in this Subparagraph. The Contractor shall bear all costs, expenses and liabilities in connection with Hindrances and all costs, expenses and liabilities of any nature whatsoever, whether or not provided for in the Contract Documents, shall conclusively be deemed to have been within the contemplation of the parties. The only remedy available to the Contractor shall be an increase in the Contract Time.

ADD the following new Subparagraphs 8.3.4, 8.3.5 and 8.3.6:

- 8.3.4 The Owner's exercise of any of its rights under the Contract Documents, including but not limited to its rights regarding changes in the Work, regardless of extent or number of such changes, performance of separate Work or carrying of the Work by the Owner or the Architect, directing overtime or changes in the sequence of the Work, withholding payment or otherwise exercising its rights hereunder, or exercising any of its

remedies of suspension of the Work or requirements of correction or re-execution of any defective Work shall not, under any circumstances, be construed as intentional interference or disruption with the Work.

- 8.3.5 No increase in the Contract Time shall be granted for any Hindrance resulting from unsuitable ground conditions, inadequate forces, the failure of the Contractor to place orders for equipment or materials sufficiently in advance to insure their delivery when needed, or any Hindrance resulting from interruptions to or suspensions of the Work so as to enable others to perform their Work, other than as specifically provided elsewhere in the Contract Documents.
- 8.3.6 If the Contractor causes a Hindrance to the Work so as to cause any damage to the Owner or any damages for which the Owner may become liable, the Contractor shall be liable therefore and the Owner may withhold from any amount yet due the Contractor the amount reasonably required to compensate the Owner for such damages, if the amount of compensation exceeds the amount yet paid to the Contractor, the Contractor shall pay the difference to the Owner immediately upon demand

## ARTICLE 9 - PAYMENTS AND COMPLETION

### 9.2 SCHEDULE OF VALUES

Add the following new Subparagraph 9.2.1:

- 9.2.1 Contractor shall obtain written concurrence in such schedule of values from the Surety furnishing any Performance Bond and Labor and Materials Payment Bond. Copy of written concurrence by the Surety shall be submitted by the time of written submission.

### 9.3 APPLICATIONS FOR PAYMENT

ADD the following new Subparagraphs: 9.3.1.3, 9.3.1.4, 9.3.1.5, and 9.3.1.6:

- 9.3.1.3 The Owner will pay ninety-five percent (95%) of the amount due the Contractor on Account of progress payments for the entire period of the Contract.
- 9.3.1.4 A subcontractor shall be paid ninety-five percent (95%) of the earned sum by the Contractor for the entire period of the Contract.
- 9.3.1.5 The Owner, Contractor and the Architect/Engineer shall cooperate to the end that retentions shall be paid promptly when all conditions of the Contract have been met.
- 9.3.1.6 Applications for payment, subsequent to the first application, shall be accompanied by Waivers of Lien from the Contractor and all major subcontractors, suppliers, and vendors.

ADD the following at the end of Subparagraph 9.3.3:

- 9.3.3 This provision shall not be construed as relieving the Contractor from the sole responsibility and expense for the care and protection of materials and Work upon which payments have been made or the restoration

of any stolen, destroyed or damaged Work, or as a waiver of the right of the Owner to require the fulfillment of all of the terms of the Contract Documents.

## 9.5 DECISIONS TO WITHHOLD CERTIFICATION

ADD the following new Subparagraph 9.5.5:

- 9.5.5 If any claim or lien is made or filed with or against the Owner, the Architect, the Project, or the Contract Sum by any persons or entity claiming that the Contractor, Subcontractor, or other person for whom the Contractor is responsible has failed to make payment for labor, services, materials, equipment, taxes or other items or obligations furnished or incurred in connection with the Work, or if at any time there shall be any evidence of such non-payment of any claim or lien which is chargeable to the Contractor, or if the Contractor, Subcontractor, or other person or entity for whom the Contractor is responsible caused damage to any Work on the project, or if the Contractor fails to perform or is otherwise in default under any terms or provisions of the Contract, the Owner shall have the right to retain from any payment then due or thereafter an amount which it deems sufficient to (1) satisfy, discharge and/or defend against such claim, lien, or action brought for judgment which may be recovered thereon, (2) make good any such non-payment, damage, failure, or default (3) compensate the Owner and Architect for any and all losses, liabilities, damages, costs, and expenses, including legal fees and costs, which may be sustained or incurred by either or both of them in connection therewith. The Owner shall have the right to apply and charge against the Contractor retained amounts as may be required for these purposes. If the amount retained is insufficient, the Contractor shall be liable for the difference and pay it directly to the Owner.

## 9.6 PROGRESS PAYMENTS

DELETE Subparagraph 9.6.6 in its entirety and replace with the following:

- 9.6.6 No recommendation or certification of a progress payment, any progress payment, final payment, or any partial or entire use or occupancy of the Project by the Owner, shall constitute acceptance of any Work not in accordance with the Contract Documents.

ADD the following new Subparagraph 9.6.9:

- 9.6.9 On all Contracts totaling two hundred thousand dollars (\$200,000.00) or more, an escrow account shall be established in a financial institution, as escrow agent, selected by mutual agreement between the Contractor and the Owner at the time Contracts are executed. The establishing of the escrow account shall be in compliance with the requirement of Indiana Code 36-1-12-14.
1. The Escrow Agent shall invest all escrowed principal in obligations selected by the Escrow Agent.
  2. The Escrow Agent shall hold the escrowed principal and income until receipt of notice from the Owner and the Contractor, or the Contractor and the Subcontractor, specifying the part of the escrowed principal

to be released from the escrow and to whom that portion is to be released. After receipt of the notice, the Escrow Agent shall remit the designated part of escrowed principal and the same proportion of then escrowed income.

3. The Escrow Agent shall be compensated for its services as the parties may agree in the amount not to exceed fifty percent (50%) of the escrowed income of the escrow amount.
4. See Section 9.10 - Final Completion and Final Payment, for provisions of retainage in escrow and final payment.

## 9.9 PARTIAL OCCUPANCY OR USE

- 9.9.1 DELETE the phrase "when such portion is designated by separate agreement with the Contractor" in line 2; DELETE the last two sentences in Subparagraph 9.9.1.

## 9.10 FINAL COMPLETION AND FINAL PAYMENT

- 9.10.1 ADD the following sentence at the end of the Subparagraph:

"Provided, however, that final payment shall not be due and payable until sixty-one (61) days after the Work has been completed and the Contract fully performed".

- 9.10.4 ADD the following at the end of Subparagraph 9.10.4:

"Final payment constituting the unpaid balance of the Contract Sum shall be paid to the Contractor in full, including any retainage *or escrowed principal and escrowed income by the escrow agent*, no less than sixty-one (61) days following the date of substantial completion. If at any of that time there are any remaining uncompleted items, an amount equal to two hundred percent (200%) of the value of each item as determined by the Architect shall be withheld until said items are completed and a Final Certificate of Payment is issued by the Architect".

DELETE Subparagraph 9.10.5 in its entirety and replace with the following:

DELETE Subparagraph 9.10.5 in its entirety and replace with the following:

- 9.10.5 The Contractor's obligation to perform the Work and complete the Project in accordance with the Contract Documents shall be absolute. Neither approval of any progress or final payment, nor the issuance of a Certificate of Substantial Completion, nor any payment by the Owner to the Contractor under the Contract Documents, nor any use or occupancy of the Project or any part thereof by the Owner, nor any act of acceptance by the Owner shall constitute an acceptance of Work not in accordance with the Contract Documents, nor does it constitute a waiver of any claims that arise from: (1) liens, claims, security interests

or encumbrances arising out of the contract or settled; or (2) terms of any warranties in favor of the Owner that are provided pursuant to the Contract Documents or otherwise.

ARTICLE 10 - PROTECTION OF PERSONS AND PROPERTY

DELETE Subparagraph 10.1 in its entirety and replace with the following:

10.1 The Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work and in connection with the Contractor's performance of any work other than the Work.

**10.2 SAFETY OF PERSONS AND PROPERTY**

10.2.1 REPLACE the words "reasonable" with the phrase "all necessary" in both instances in line 1.

ADD the following to Subparagraph 10.2.1:

.4 Protect excavation, trenches, buildings and grounds from all water damage. Furnish necessary equipment to provide this protection during the term of the Contract. Construct and maintain necessary temporary drainage to keep excavations free of water.

.5 Provide protection of the Work against wind, storms, cold and heat. At the end of each day, cover new Work which may be damaged;

.6 Provide adequately-engineered shoring and bracing required for safety and for the proper execution of the Work and have same removed when the Work is completed; and

.7 Protect, maintain and restore benchmarks, monuments and other reference points affected by the Work. If benchmarks, monuments or other reference points are displaced or destroyed, points shall be re-established and markers reset under the supervision of a licensed surveyor, who shall furnish certificates of its work.

10.2.5 INSERT the word "solely" after the word "loss" in the clause which reads "except damage or loss attributable to acts or omissions of the Owner or Architect...".

ADD the following new Subparagraphs 10.2.9, 10.2.10 and 10.2.11:

- 10.2.9 "The Project is designed to be self-supporting and stable after the Work is fully completed. Except as otherwise provided, it is solely the Contractor's responsibility to determine erection procedures and sequences, and to ensure the safety of the Project and its component parts during erection. This includes, but is not limited to, the addition or modification of whatever temporary bracing, guys or tie downs may be necessary. Such material shall be removed after completion of the Work".
- 10.2.10 The Contractor shall conform with the United States Department of Labor and the State Division of Labor Occupational Safety and Health Administration regulations.
- 10.2.11 The Contractor shall have the Hazard Communication Program in effect with all their personnel working on the project. All Material Data sheets should be current as required by law.

## ARTICLE 11 - INSURANCE AND BONDS

### 11.1 CONTRACTOR'S INSURANCE AND BONDS

#### 11.1.1 ADD the following at the end of the subparagraph:

- .1 The form of such bonds shall be acceptable to Owner and in compliance with **Indiana** Statute:
- .2 The Bonds shall remain in effect for a period of not less than one (1) year following the date of Substantial Completion and/or time required to resolve any items of incomplete Work and the payment to any owed amounts, whichever time period extends the longer.
- .3 The amount of the Performance Bond and the Labor and Material Bond shall each be 100% of the Contract Sum; and
- .4 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 his power of attorney indicating the momentary limit of such power.
- .5 The required insurance shall be written for not less than the limits stated in the Owner's Instructions to the Architect (AIA Document G612, Part B) as included in the Project Manual or as required by law, whichever is greater and with the Owner, Architect, Consultants, and Engineers or their assigned names as "Additional Insureds" "Primary" on the insurance policy. Coverages shall be maintained

without interruptions from date of commencement, of the work, until date of final payment and termination of any coverage required to be maintained after final payment.

Add the following new Subparagraph 11.1.5 and 11.1.6:

- 11.1.5 The Contractor shall furnish one copy of Certificate of Insurance and Bonds required of each copy of the agreement, which shall specifically set forth evidence of all coverages required. Furnish Owner copies of any endorsements subsequently issued amending coverage limits.
- 11.1.6 The Contractor shall keep the surety informed of the progress of the Work, changes in the Work, requests for release of retainage, request for final payment and any other information required by the surety.

**11.2 OWNER'S INSURANCE**

ADD the following new Subparagraph 11.2.1.1:

- 11.2.1.1 Any errors and omissions insurance maintained by the Architect or the Architect's Consultants shall not serve to exclude the Architect or Architect's Consultant from the mutual waiver of rights outlined in paragraph 11.3.7. The waiver of rights is given in exchange for property insurance covering the work.
- 11.2.2 Change the second sentence to include after sub-subcontractors: "...and Architects and Engineers of Record".

**ARTICLE 13 – MISCELLANEOUS PROVISIONS**

**13.2 SUCCESSORS AND ASSIGNS**

- 13.2.1 DELETE the last two sentences of this Subparagraph.

ADD the following as the last two sentences of the Subparagraph:

"Contractor shall not assign the Contract or any portion thereof without the written consent of Owner. Owner is entitled to assign the Contract or any portion thereof".

- 13.2.2 DELETE this Subparagraph in its entirety.

13.4 TESTS AND INSPECTIONS

13.4.7 ADD the following new Subparagraph:

Neither the observations of the Architect, its administration of the Contract Documents, nor inspections tests or approvals by persons other than the Contractor shall relieve the Contractor from its obligation to perform the Work in accordance with the Contract Documents.

13.6 ADD the following new Paragraph:

The Owner will require the Contractor to conduct a background check for criminal history for all workers on the project in compliance with Indiana Code 20-5-2-7 and 20-5-2-8.

"The Contractor shall provide, if awarded the right to provide services or materials under this agreement, a list of all personnel used by or on behalf of the Contractor, whether employed by them or not, who will be engaged in the providing of services or delivery of materials and goods.

With said list of persons shall be provided written evidence of a criminal record search with respect to all persons on the list dated within thirty (30) days of the said date of the Contract and extending at least twenty (20) years prior.

Contractor agrees that no person will be providing services who has any criminal conviction for any type of behavior that would place the students or staff at risk.

If evidence of such behavior occurs after this initial search, but during their employment on site, such worker shall be removed immediately from the site and shall be banned from the jobsite for the duration of the project.

Evidence of behavior that is prohibited would include, but not limited to, the following:

- (1) Murder [IC 34-42-1-1].
- (2) Causing suicide [IC 35-42-1-2].
- (3) Assisting suicide [IC 35-42-1-2.5].
- (4) Voluntary manslaughter [IC 35-42-1-3].
- (5) Reckless homicide [IC 35-42-1-5].
- (6) Battery [IC 35-42-2-1] unless ten (10) years have elapsed from the date the individual was discharged from probation, imprisonment, or parole, whichever is later.
- (7) Aggravated battery [IC 35-42-2-1.5].
- (8) Kidnapping [IC 35-42-3-2].
- (9) Criminal confinement [IC 35-42-3-3].
- (10) A sex offense under ([C 35-42-4].
- (11) Carjacking [IC 35-42-5-2].

- (12) Arson [IC 35-43-1-1] unless ten (10) years have elapsed from the date the individual was discharged from probation, imprisonment, or parole, whichever is later.
- (13) Incest [IC 35-46-1-3].
- (14) Neglect of a dependent [IC 35-46-1-4(a)(1) and IC 35-46-1-4(a)(2)] unless ten (10) years have elapsed from the date the individual was discharged from probation, imprisonment, or parole, whichever is later.
- (15) Child selling [IC 35-46-1-4(b)].
- (16) Contributing to the delinquency of a minor [IC 35-46-1-8] unless ten (10) years have elapsed from the date the individual was discharged from probation, imprisonment, or parole, whichever is later.
- (17) An offense involving a weapon under IC 35-47 unless ten (10) years have elapsed from the date the individual was discharged from probation, imprisonment, or parole, whichever is later.
- (18) An offense relating to controlling substances under IC 35-48-4 unless ten (10) years have elapsed from the date the individual was discharged from probation, imprisonment, or parole, whichever is later.
- (19) An offense relating to material or a performance that is harmful to minors or obscene under IC 35-49-3 unless ten (10) years have elapsed from the date the individual was discharged from probation, imprisonment, or parole, whichever is later.
- (20) An offense relating to operating a motor vehicle while intoxicated under IC 9-30-5 unless five (5) years have elapsed from the date the individual was discharged from probation, imprisonment, or parole, whichever is later.
- (21) An offense that is substantial equivalent to any of the offenses listed in this subsection in which the judgment of conviction was entered under the law of any other jurisdiction. Should the Contractor change personnel during the existence of the Contract providing for services, it shall at least ten (10) days prior to using any other personnel other than those previously disclosed, provide the same information for the new personnel as provided for under the terms of the provision."

13.7 ADD the following new Paragraph:

The Owner will require the Contractor to conduct testing for drugs and alcohol for all workers on the project. Drugs and alcohol shall be as defined by Indiana Code 35-48-4-4.

"The Contractor shall provide, if awarded the right to provide services or materials under this agreement, a list of all personnel used by or on behalf of the Contractor, whether employed by them or not, who will be engaged in the providing of services or delivery of materials and goods.

With said list of persons shall be provided written evidence of drug and alcohol testing with respect to all persons on the list dated within seven (7) days of the said date of the Contract.

Contractor agrees that no person will be providing services who has tested positive to any of the items included and shall be banned from the jobsite for the duration of the project.

Continued testing shall be conducted throughout the project duration every six months maximum. Any persons testing positive shall be removed immediately from the site and shall be banned from the jobsite for the duration of the project.

The Contractors and their employees shall meet all State and Federal statutory requirements".

13.8 ADD the following new Paragraph:

The Contractor and all its subcontractors are required to comply with all provisions of Indiana Code 22-5-1.7 to affirm that it does not knowingly employ or contract with an unauthorized alien or retain an employee or contract with a person that they subsequently learn is an unauthorized alien.

The Contractor is required to enroll in and verify the work eligibility status of all newly hired employees of the contractor through the E-Verify program as defined in IC 22-5-1.7-3.

The Contractor is not required to verify the work eligibility status of all newly hired employees of the contractor through the E-Verify program if the E-Verify program no longer exists and the Contractor signs an affidavit affirming that the Contractor does not knowingly employ an unauthorized alien.

13.9 ADD the following new Paragraph:

There shall be no firearms allowed on the project site or anywhere within the project property.

Exceptions would be made for law enforcement officials, security forces required elsewhere by these Specifications, or per other requirements or allowances specifically made by the Owner.

13.10 ADD the following new Paragraph:

There shall be no smoking or tobacco use allowed within the buildings, on the project site or anywhere within the project property. Violators shall be removed from the project immediately.

Any construction materials in contact with or exposure to such tobacco products shall be removed and replaced with new, at the Contractor's expense.

Additional requirements and levels of protection are afforded to Public Buildings in compliance with Indiana Code 16-41-37, and include an enclosed structure or part of an enclosed structure that is one of the following:

- (1) Occupied by an agency of state or local government.
- (2) Used as a classroom building or a dining area at a state educational institution (as defined in IC 20-12-0.5-1).
- (3) Used as a public school (as defined in IC 20-18-2-15).
- (4) Licensed as a health facility under IC 16-21 or IC 16-28.
- (5) Used as a station for paid firefighters.
- (6) Used as a station for paid police officers.

- (7) Licensed as a childcare center or child care home or registered as a child care ministry under IC 12-17.2.
- (8) Licensed as a hospital under IC 16-21 or a county hospital subject to IC 16-22.
- (9) Used as a provider's office.
- (10) School bus (as defined in IC 16-41-37-2.3).

## ARTICLE 14 - TERMINATION OR SUSPENSION OF THE CONTRACT

### 14.1 TERMINATION BY THE CONTRACTOR

DELETE Subparagraph 14.1.1 in its entirety and replace with the following:

- 14.1.1 If the Work is stopped for a period of sixty (60) days under an order of any court or other public authority having jurisdiction, or as a result of any act of government such as a declaration of a national emergency making material unavailable, through no act or failure to act of the Contractor or a Subcontractor or their agents or employees or any other persons performing any of the Work under a contract with the Contractor, and the Owner has not otherwise suspended, delayed, disrupted or interrupted the Work in accordance with the Subparagraph, then the Contractor may, upon fourteen (14) days' written notice to the Owner, terminate the Contract, and recover from the Owner payment for all Work executed to date. Recovery by the Contractor of lost anticipated profit and overhead and other consequential and incidental damages is hereby specifically excluded.

### 14.1.3 DELETE all words following the words "payment for" and ADD the following after "payment for":

"all work executed to date. Recovery by the Contractor of last anticipated profit and overhead and other consequential and incidental damages is hereby excluded."

ADD the following new Subparagraph 14.1.5:

- 14.1.5 "The Owner shall not be liable to the Contractor for the Owner's failure to perform its obligations set forth herein if such performance is prevented or interrupted by war (including the consequences thereof), fire, tornado, hurricane, windstorms, labor problems, fuel or transportation shortages, civil unrest, governmental action, or any other natural or economic disaster or cause which is reasonably beyond the control of the Owner ("Force Majeure"). If the estimated duration of the Force Majeure is one year or more, the Contractor shall have the option to terminate this Contract upon thirty (30) days' written notice. In the event that the estimated duration of the Force Majeure is less than one year, the Contract Time shall be increased by the same length of time as the Force Majeure persisted."

### 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

- 14.3.1 DELETE this Subparagraph in its entirety.

14.3.2 DELETE this Subparagraph in its entirety.

**14.4 TERMINATION BY THE OWNER FOR CONVENIENCE**

DELETE Subparagraph 14.4.3 in its entirety and substitute the following:

14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; reimbursable costs actually incurred, including costs attributed to termination of Subcontracts; and an amount representing six percent (6%) of the amount of the work not executed".

**ARTICLE 16 - EQUAL OPPORTUNITY**

16 ADD this new Article 16, including Paragraphs and Subparagraphs as follows:

**16.1 POLICIES OF EMPLOYMENT**

16.1.1 The Contractor and the Subcontractor shall not discriminate against any employee or applicant for employment because of race, religion, color, age, sex or national origin, in connection with, but not limited to employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff or termination, rates or pay or other forms of compensation and selection for training including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth its policies of non-discrimination consistent with this Article.

**END OF SECTION 00 7301**

**SECTION 01 1100 - SUMMARY OF WORK – SINGLE CONTRACT**

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Section Includes:

1. Work covered by the Contract Documents.
2. Contractor's use of premises.
3. Coordination of work and trades.
4. Owner occupancy during construction.
5. Construction scheduling and phasing.

B. Project is being bid with construction work under one General Contract for all trades.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. Provide and pay for all materials, labor, services, equipment, licenses, permits, fees, taxes, and other items necessary for the execution, installation and completion of Work indicated in Contract Documents.

B. The Work includes coordination with Architect, Owner's Representative, Owner's separate contractors, material suppliers and vendors.

1.3 CONTRACTOR'S USE OF PREMISES

A. Contractor shall limit his use of premises for work and storage, to allow for Owner's occupancy as identified in this Section.

B. Assume full responsibility for protection and safekeeping of products stored on premises.

1. Move any stored products that interfere with operations of Owner or other Contractor.
2. Obtain and pay for use of additional storage or work areas needed for operations.
3. Available space for construction field offices and storage sheds is limited to the project site. Contractor must arrange for off site storage as required.

C. Contractor shall allow for any other work outside of this contract, whether by Owner's personnel or Contractors under Owner's separate contracts, to proceed without delay or impediment.

1.4 COORDINATION

A. Schedule, manage and expedite all work under his Contract, coordinating his work with his sub-contractors, material suppliers, vendors, and trades so that no conflicts of timing or location occur.

1. Work shall progress according to approved progress schedule. Schedule dates for incorporation of work, and identify all critical path events and dates.
  2. Coordinate and provide all floor, ceiling, roof, and wall sleeves.
  3. Provide all cutting, fitting or patching required.
- B. Keep Architect informed on the progress of the work.
1. Close or cover no work until duly inspected and approved.
  2. Uncover un-inspected work and after approval, repair and/or replace all work at no cost to Owner.
  3. Notify Architect at least 7 days in advance of utility connections, utility shut-offs, mechanical equipment and oil line cutovers, street or alley closings to allow ample time to receive Owner's written approval of procedure to be followed.
  4. Coordinate all operations with the Architect and Owner. Complete in the minimum amount of time.
- C. Protection:
1. Do not close or obstruct streets, entrance drives, sidewalks or other facilities without permission of the Owner and local authorities.
  2. Conduct operations with minimum interference.
  3. Furnish, erect and maintain barricades, warning lights, signs and guards as may be required.

#### 1.5 OWNER OCCUPANCY

- A. Owner will occupy premises during entire period of construction for the conduct of their daily activities and operations.
- B. Cooperate with Owner or his representative in all construction operations to minimize conflict and to facilitate Owner's usage of building.
- C. Conduct construction operations to assure least inconvenience to Owner and public.
- D. Provide temporary heating and ventilation, temporary dust partitions, plastic sheeting, plywood sheeting, and any other means required to protect all elements of existing building from damage or deterioration during construction.

#### 1.6 CONSTRUCTION SCHEDULING AND PHASING

- A. Owner intends to award the Contract and issue a Notice to Proceed within 30 days after bid opening.
- B. Contractor shall mobilize on site and begin work immediately thereafter.
- C. Contractor must achieve Substantial Completion by October 15, 2026.
- D. Contractor must achieve Final Completion by October 15, 2026.

**END OF SECTION 01 1100**

## SECTION 01 1400 - GENERAL CONSTRUCTION REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 REQUIREMENTS INCLUDED

- A. Section Includes:
1. Special Provisions.
  2. Project Closeout.

#### 1.2 SPECIAL PROVISIONS

- A. Project:
1. The Project is the total construction for which the Contractor is responsible, including all labor, materials and equipment used or incorporated in such construction.
- B. Work:
1. The Work comprises the completed construction designed under the Project and includes labor necessary to produce such construction, and materials and equipment to be incorporated in such construction.
- C. Contract Documents includes the following (See General Conditions 1.1.1 for definition):
1. Project Manual. (See General Conditions 1.1.7 for definition) The Project Manual is composed of the following:
    - a. The Bidding Requirements.
    - b. The Contract Forms.
    - c. The Conditions of the Contract.
    - d. The Specifications. (See General Conditions 1.1.6 for definition)
  2. Drawings (See General Conditions 1.1.5 for definition)
  3. Addenda (See Instructions to Bidders 1.3 for definition)
  4. Other Documents as identified in the Contract for Construction, the General Conditions of the Contract for Construction, and Supplementary General Conditions
- D. Permits and Fees:
1. The Contractor is responsible for verifying any and all fees required from all utilities, agencies and authorities having jurisdiction. The Contractor shall obtain and pay for the Building Permit and all other permits and governmental fees, licenses and inspections required, whether specifically referenced or not.
  2. The Contractor is to include in the bid the cost of all charges payable to State, local or special community development agencies and any additional fees as required for the completion of the project, including, but not limited to:

- a. Water company connection fees and charges
- b. Electrical company charges.
- c. Telephone company charges.
- d. Sanitary sewer connection fees and charges.
- e. Gas Company charges.
- f. Fire sprinkler connection fees and charges.

### 1.3 PROJECT CLOSEOUT

#### A. Cleaning during construction:

1. The premises and the job site shall be maintained in a reasonable neat and orderly condition and kept free from accumulations of waste materials and rubbish during the entire construction period. Remove crates, cartons, and other flammable waste materials or trash from the work areas at the end of each working day. Do not allow debris to blow onto adjoining properties. Respond immediately to request from adjoining property owners to remove any debris that does manage to show up on adjoining properties.
2. Maintain the project in clean condition until the Owner accepts the building.
3. Refer to Section 01 7423 - Cleaning for additional requirements.

#### B. Closeout Procedures:

1. Refer to Section 01 7700 - Closeout Procedures for additional requirements.

#### C. Closeout Submittals:

1. Before the project can be closed out, the Contractor shall have provided all submittals required by the Contract Documents. All submittals required by the Contract Drawings or Specifications shall be sent to the Architect for review and coordination, in accordance with the requirements of the respective Drawing or Specification section. Any items that the Architect determines are incomplete or incorrect shall be corrected and resubmitted.
2. Refer to Section 01 7800 - Closeout Submittals for additional requirements.

#### D. Retainage:

1. The Architect will assign a monetary value to all punchlist items not completed, and to all required submittals not received, as of the date of "Final Acceptance" and an amount equal to 200 percent of the total value of those items shall be retained and/or deducted from the Contractor's final payment until the Contractor demonstrates to the Architect's satisfaction that such items have been completed or corrected. Refer to the General Conditions and Supplementary General Conditions for additional information regarding retainage.

**END OF SECTION 01 1400**

## SECTION 01 3100 - PROJECT MANAGEMENT AND COORDINATION

### PART 1 - GENERAL

#### 1.1 REQUIREMENTS INCLUDED

- A. Section Includes:
  - 1. Submittals.
  - 2. Project coordination.
- B. Procedures for preparation, updating and submittal of Construction Progress Documentation.

#### 1.2 SUBMITTALS

- A. Submit all items for execution of Contract as listed in Section 00 4393 – Contractor’s Bid Submittal checklist.
- B. Submit shop drawings, product data, and other required submittals, in accordance with Section 01 3300 - Submittal Procedures, for review and compliance with Contract Documents, for field dimensions and clearances, for relation to available space, and for relation to Work by Owner or separate Contracts.
- C. Submit Requests for Information and interpretation of Contract Documents in a timely manner and obtain replies from Architect in accordance with the Contract.

#### 1.3 PROJECT COORDINATION

- A. Coordinate construction activities and work of all trades under various Sections of these Specifications and Work of Contract to facilitate orderly installation of each part of Work. Coordinate construction operations included under different Sections of Specifications and Contract that are dependent upon each other for proper installation, connection, and operation.
- B. Where installation of one part of Work is dependent on installation of other components, either before or after that part of Work, schedule construction activities in sequence required to obtain uninterrupted installation.
- C. Obtain drawings, manufacturer's product data, instructions, and other data to provide a complete and proper installation.
  - 1. Check field dimensions prior to installing products. Verify necessary clearances and means of access from equipment storage to final position.
  - 2. Make data and information available to trades involved.
- D. Ensure that utility requirements of operating equipment are compatible with building utilities. Coordinate Work of various specification Sections for installation and final connection of equipment.
  - 1. Assure that mechanical, plumbing, and electrical rough-ins have been properly located.

- E. Coordinate space requirements and installation of mechanical, plumbing, and electrical Work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, conduits, and wiring, as closely as possible; make runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- F. Where availability of space is limited, coordinate installation of different components to ensure maximum accessibility for required maintenance, service, and repair.
- G. Provide for installation of items scheduled for future installation.
- H. Where necessary, prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Prepare memoranda for Architect and separate contractors where coordination of their work is required.
- I. In finished areas, conceal pipes, ducts, conduits, and wiring in the construction. Coordinate locations of fixtures and outlets with finish elements.
- J. Coordinate completion and clean up of Work of separate Sections in preparation for completion of work per the Contract.
- K. After Owner occupancy of Project, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize to Owner.

**END OF SECTION 01 3100**

## SECTION 01 3200 - CONSTRUCTION PROGRESS DOCUMENTATION

### PART 1 - GENERAL

#### 1.1 REQUIREMENTS INCLUDED

##### A. Section Includes:

1. Construction Progress Schedule.
2. Contractor as-built drawings.
3. Provisions for format, content, revisions, submittals and distribution.

#### 1.2 CONTRACTOR AS-BUILT DRAWINGS

##### A. Format:

1. Contractor's job superintendent to record as-built conditions onto a single set of project drawings for all trades included in scope of work.
2. As-built set to be kept on site at all times.
3. Documentation may be hand written in ink or pasted directly onto drawings. All information must be considered to be permanently affixed.

##### B. Content:

1. Include work of all trades included in scope of work.
2. Include all changes, errors, deviations, omissions, additions, clarifications and corrections.
3. Include any item installed in a location other than that shown on contract drawings.
4. Correct any inaccurate or altered dimension.

##### C. Revisions:

1. As-built drawings shall be updated daily with all work completed.
2. Contractor job superintendent to be responsible for subcontractor information on as-built drawings.

##### D. Submittals:

1. As-built drawings may be reviewed at progress meetings or periodically as requested by Architect to review entries to date.

##### E. Distribution:

1. As built drawings shall be given to Architect prior to release of final payment.
2. Refer to Section 01 7800 - Closeout Submittals.

**END OF SECTION 01 3200**

## SECTION 01 4500 - QUALITY CONTROL

### PART 1 - GENERAL

#### 1.1 REQUIREMENTS INCLUDED

- A. Section Includes:
1. Quality Control Procedures.
  2. Contractor Field Inspection and Testing.
  3. Contractor's Test and Inspection Reports.
  4. Completion and Inspection of Work.

#### 1.2 QUALITY CONTROL PROCEDURES

- A. Monitor quality control over Contractor staff, subcontractors, suppliers, manufacturer's, products, services, site conditions, and workmanship.
- B. Comply fully with manufacturer's published instructions, including each step in sequence of installation.
- C. Should manufacturer's published instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as a minimum quality for Work, except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform Work by persons who are thoroughly qualified and trained in their respective trade, to produce workmanship of specified quality.
- F. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.
- G. Perform tests required by governing authorities having jurisdiction and utilities having jurisdiction.

#### 1.3 CONTRACTOR FIELD INSPECTION AND TESTING

- A. Contractor: Test and Inspect Work provided under this Contract to ensure Work is in compliance with Contract requirements. Required tests and inspections are indicated in each individual Specification Section.
- B. Preparatory Inspection: Performed prior to beginning Work and prior to beginning each segment of Work and includes:
1. Review of Contract requirements.
  2. Review of shop drawings and other submittal data after return and approval.
  3. Examination to assure materials and equipment conform to Contract requirements.

4. Examination to assure required preliminary or preparatory Work is complete.
- C. Initial Inspection: Performed when representative portion of each segment of Work is completed and includes:
1. Performance of required tests.
  2. Quality of workmanship.
  3. Review for omissions or dimensional errors.
  4. Examination of products used, connections and supports.
  5. Approval or rejection of inspected segment of Work.
- D. Follow-Up Inspections: Performed daily, and more frequently as necessary, to assure non-complying Work has been corrected.
- E. Testing and Inspection: Perform testing and inspection in accordance with requirements in individual Sections.
- 1.4 **CONTRACTOR'S TEST AND INSPECTION REPORTS**
- A. Prepare and submit, to Architect, a written report of each test or inspection signed by Contractor Quality Control Representative performing inspection within two (2) days following day inspection was made.
- 1.5 **COMPLETION AND INSPECTION OF WORK**
- A. Prior to final acceptance by Architect, submit a certification signed by Contractor to Architect stating that all Work has been inspected and all Work, except as specifically noted, is complete and in compliance with Contract Documents.

**END OF SECTION 01 4500**

## SECTION 01 6500 - PRODUCT DELIVERY AND HANDLING

### PART 1 - GENERAL

#### 1.1 REQUIREMENTS INCLUDED

- A. Section Includes:
1. Material shipments and project delivery to job site.
  2. Handling of materials and products included in project.
  3. Phasing of the work.

#### 1.2 DELIVERY

- A. Delivery materials, supplies or equipment to Project site during working hours.
- B. Deliveries made during other than normal working hours must be received by an authorized agent of the Contractor.
- C. No employee of the Owner is authorized to receive any shipment designated for this project.
- D. The Owner assumes no responsibility for receiving any shipments designated for this project.
- E. Under no circumstances may shipments be directed to, or in care of, the Owner.

#### 1.3 HANDLING

- A. All materials furnished under this Contract shall be identified, shipped, addressed, consigned, etc., to the Contractor who may be charged therewith by giving the name of the Contractor, the name of the project, the street and the city.

#### 1.4 PHASING OF THE WORK

- A. Work may be phased, limiting installation of materials to separate areas of site or times of construction.
- B. Any and all coordination of materials on site related to phasing of the work shall be accomplished by the Contractor at no additional costs to the Owner.
- C. All materials, equipment, and associated items and components for the scope of work are to be delivered to the site only as and when needed for installation. Time allowed on site prior to installation shall be a reasonable timeframe as deemed acceptable by the Architect.
- D. All items on site shall be stored off the ground and protected by watertight encapsulating cover in preparation for immediate installation.

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- E. Any and all items on site in a timeframe deemed unacceptable by the Architect for any reason, or deemed to be damaged by improper handling or storage, are to be removed from the site and returned to the manufacturer, without cost to the Owner. Products shall be replaced entirely with new materials at the time needed and deemed acceptable for installation.

**END OF SECTION 01 6500**

## SECTION 01 7329 - CUTTING AND PATCHING

### PART 1 - GENERAL

#### 1.1 REQUIREMENTS INCLUDED

##### A. Section Includes:

1. Make several parts fit properly.
2. Uncover work to provide for installation of ill-timed work.
3. Remove and replace defective work.
4. Remove and replace work not conforming with requirements of Contract Documents.
5. Remove existing construction necessary to install new materials, equipment, mechanical or electrical items.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- ##### A. For replacement of work removed: Comply with Specifications.

### PART 3 - EXECUTION

#### 3.1 PREPARATION

##### A. General:

1. Do not endanger any other work by cutting or altering work or any part of it.
2. Do not cut or alter work of another contractor without the written consent of Architect.
3. Patching and refinishing shall be executed by the trade experienced in such finishing work.

##### B. Prior to cutting:

1. Provide shoring, bracing and support as required to maintain structural integrity of project.
2. Provide protection for other portions of project.
3. Provide protection from elements.
4. Advise Architect designating time work will be uncovered to provide for observation.

#### 3.2 PERFORMANCE

- ##### A. Execute cutting and demolition by methods which will prevent damage to other work and will provide proper surfaces to receive installation of repairs and new work.

- B. Execute excavating and backfilling by methods which will prevent damage to other work and will prevent settlement.
- C. Execute fitting and adjustment of products to provide a finished installation to comply with specified tolerances, finishes.
- D. Cut existing walls, floors, ceilings, roofs, etc. necessary for the proper installation of new materials, equipment, mechanical or electrical items. Provide all necessary framing, lintels, hangers, etc. to maintain the structural integrity of the building system after cutting.
- E. Employ original installer to perform cutting and patching for exposed finished surfaces.
- F. Restore work which has been cut or removed; install new products to provide completed work in accord with requirements of Contract Documents.
- G. Contractor is responsible for cost to restore or patch adjacent surfaces to original condition.
- H. Fit work airtight to pipes, sleeves, ducts, conduits and other penetrations.
- I. Refinish entire surface as necessary to provide an even finish.
  - 1. Continuous surfaces: To nearest intersections.
  - 2. Assembly: Entire refinishing.

**END OF SECTION 01 7329**

## SECTION 01 7700 - CLOSEOUT PROCEDURES

### PART 1 - GENERAL

#### 1.1 REQUIREMENTS INCLUDED

##### A. Section Includes:

1. Administrative procedures in closing out the work.
2. Procedures for Substantial Completion.
3. Procedures for Final Inspection.
4. Required contractor guarantees.
5. Evidence of payments and release of liens.
6. Final adjustment of accounts.
7. Final Application and Certificate for Payment.
8. Post construction inspection.
9. Closeout submittals required are specified in Section 01 7800.

#### 1.2 SUBSTANTIAL COMPLETION

- A. Submit written certification to Architect that project or designated portion of project is substantially complete and ready for use by Owner.
- B. Architect will make an inspection within a reasonable time after receipt of such notice. The Contractor is responsible for the final punchlist inspection in accordance with the General Conditions. No inspection by the Architect will be made until the Contractor submits written certification that the punchlist has been issued and complete. The Architect's Substantial Completion inspection is not for the purpose of preparing a "to-do" list for the Contractor to use in finishing the work. If it becomes apparent at the time of the Substantial Completion inspection that items affecting life safety, accessibility, security, or full intended use of space are not complete, the inspection will be terminated and the Contractor will be liable for the costs of re-inspection.
- C. Should Architect consider that work is not substantially complete:
1. Architect shall immediately notify Contractor, in writing, stating reasons.
  2. Contractor to remedy deficiencies and send second written notice of substantial completion to Architect.
  3. Architect will re-inspect Work.
  4. Contractor to pay costs of Architect's re-inspection.
- D. When Architect/Engineer considers that work is substantially complete; Architect will prepare and issue a Certificate of Substantial Completion, AIA Document G704, complete with signatures of Owner and Contractor, accompanied by Contractor's list of items to be completed or corrected ("Punchlist") as verified and amended by the Architect. Retainage amounts will be adjusted per General Conditions and Supplementary General Conditions.

1.3 FINAL INSPECTION

- A. Contractor shall submit written certification that:
  - 1. Contract Documents have been reviewed.
  - 2. Work has been completed and inspected in accordance with Contract Documents.
  - 3. Equipment and systems have been tested in presence of Owner's representative and are operational.
  - 4. Work is completed, and ready for final inspection.
  - 5. If any items from the Certificate of Substantial Completion Inspection are not completed, the final inspection will be terminated and the Contractor will be liable for the costs of re-inspection.
- B. Architect will make final inspection after receipt of certification.
- C. Should Architect consider that work is incomplete or defective:
  - 1. He shall promptly notify Contractor, in writing, stating reasons.
  - 2. Contractor shall take immediate steps to remedy the stated deficiencies, and send second written notice to Architect/Engineer certifying that Work is complete.
  - 3. Architect will re-inspect Work.
  - 4. Contractor to pay costs of Architect's re-inspection.
  - 5. Final payment will not be released.
- D. When Architect finds that work is acceptable in accordance with Contract Documents, he shall request contractor to prepare Project Closeout Submittals in accordance with Section 01 7800.

1.4 GUARANTEES

- A. Contractor agrees to make good all damage to the construction of building or site or equipment which in the opinion of the Architect is a result of or incidental to the use of materials, equipment or workmanship which are inferior, defective or not in accordance with the specifications.
- B. In case repairs become necessary, the Owner will give written notice to the Contractor to make same and in case of failure of the Contractor to commence such repairs within 30 days after such notice, the Owner may make the repairs either by its own employees or by independent contract and may thereupon recover from the Contractor and his Sureties the cost of the repairs so made together with the cost of supervision and inspection thereof. The Owner will have sixty (60) days after the expiration of said guarantee period in which to notify the Contractor of any such repairs necessary on the date of such expiration. The determination of the necessity for repairs shall rest entirely with the Architect whose decision upon the matter shall be final and obligatory upon the Contractor.
- C. The Guarantees herein stipulated shall extend to the whole body of the improvement and all its appurtenances.

1.5 EVIDENCE OF PAYMENTS AND RELEASE OF LIENS

- A. Contractor to execute and submit:

1. Contractor's Affidavit of Payment of Debts and Claims (AIA Document G706).
2. Contractor's Affidavit of Release of Liens (AIA Document G706A)
3. Consent of Surety to Final Payment (AIA Document G707).

B. All submittals shall be duly executed before delivery to Architect.

#### 1.6 FINAL ADJUSTMENT OF ACCOUNTS

A. Submit final statement of account to Architect.

B. Statement shall reflect all adjustments:

1. Original Contract Sum.
2. Additions and deductions resulting from:
  - a. Change Orders.
  - b. Cash Allowances
  - c. Contingency Allowance.
  - d. Unit Prices
  - e. Deductions for uncorrected work.
  - f. Penalties and Bonuses.
3. Total Contract Sum, as adjusted.
4. Previous payments.
5. Sum remaining due.

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

#### 1.7 FINAL APPLICATION AND CERTIFICATE FOR PAYMENT:

A. Contractor shall submit final application in accordance with procedures and requirements of General and Supplementary Conditions prior to submission of Final Application and Certificate for Payment.

B. Architect will review Final Application and issue Final Certificate in accordance with provisions of General Conditions.

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

#### 1.8 POST CONSTRUCTION INSPECTION

A. Prior to expiration of one year from date of Substantial Completion, Architect may make visual inspection of Project in company with Owner and Contractor to determine whether correction of Work is required in accordance with provisions of General Conditions.

B. For Guarantee beyond one year Architect may make inspections at request of Owner after notification to Contractor.

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- C. Architect will promptly notify Contractor, in writing, of any observed deficiencies.
- D. Any/all corrections to work at that time to be at Contractor's expense.

**END OF SECTION 01 7700**

## SECTION 01 7800 - CLOSEOUT SUBMITTALS

### PART 1 - GENERAL

#### 1.1 REQUIREMENTS INCLUDED

A. Section Includes:

1. Operation and Maintenance Manuals.
2. Product Warranties.
3. Project Record Documents (As-Built Drawings).
4. Instruction of Owner's Personnel.
5. Closeout maintenance materials required.

- B. Unless specifically permitted by the Architect, the Contractor is to provide all items listed herein to the Owner via the Architect prior to the date of Substantial Completion.

#### 1.2 OPERATION AND MAINTENANCE MANUALS

A. Submission Requirements:

1. Furnish Owner with all manual information electronically on CD in PDF format.
2. Submit to Architect for review of information and forwarding to Owner for Owner's records.

B. Preparation:

1. Prepare data by personnel experienced in maintenance and operation of described products.
2. Obtain information directly from manufacturer of equipment or product.

C. Format:

1. Prepare organization of data in the format of an instructional manual.
2. Cover:
  - a. Identify manual with title OPERATION AND MAINTENANCE MANUAL.
  - b. Identify title of Project.
  - c. Identify subject matter of contents.
3. Drawings:
  - a. Provide applicable drawing files from manufacturer or Architect's drawing files as required. Contact Architect to obtain PDF drawing files as needed.
  - b. For any hard copies required, provide with reinforced punched binder tab. Bind in with text. Fold larger drawings to size of text pages.

D. Contents:

1. Table of Contents: Provide title of Project; names, addresses, and telephone numbers of Architect/Engineer, Subconsultants, and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.
2. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
3. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
4. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
5. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
6. Warranties: Include a copy of each.
7. Reports: Include a copy of all test reports, certificates, testing and balance data, etc.

E. Manual for Equipment and Systems:

1. Each Item of Equipment and Each System: Include description of unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and model number of replaceable parts.
2. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
3. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
4. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
5. Include color coded wiring diagrams as installed.
6. Provide servicing and lubrication schedule, and list of lubricants required.
7. Include manufacturer's published operation and maintenance instructions.
8. Include sequence of operation by controls manufacturer.
9. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
10. Provide control diagrams by controls manufacturer as installed.
11. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.
12. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
13. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
14. Include test and balancing reports as specified in Section 23 0593 - Testing, Adjusting and Balancing.
15. Additional Requirements as specified in individual Product specification Sections.
16. Provide a list of design data, settings, setpoints, etc., as applicable for equipment.

1.3 PRODUCT WARRANTIES

A. Submission Requirements:

1. Furnish Owner with all warranty information electronically on CD in PDF format.
2. Submit to Architect for review of information and forwarding to Owner for Owner's records.

**B. Preparation:**

1. Gather Warranties required for specific Products or Work as specified in each individual Section.
2. Obtain information directly from responsible Subcontractor, supplier, and manufacturer of equipment or product within 10 days after completion of applicable item of Work.
3. Except for items put into use with Architect approval, leave date of beginning of time of warranty until the Date of Final Acceptance is determined.
4. Verify that documents are in proper form, are complete, contain full information, are notarized, and are fully executed and valid.
5. Co-execute submittals when required.
6. Retain warranties until time specified for submittal.

**C. Format:**

1. Prepare organization of data in the format of an instructional manual.
2. Cover:
  - a. Identify manual with title WARRANTIES.
  - b. Identify title of Project.
  - c. Identify subject matter of contents.

**1.4 PROJECT RECORD DRAWINGS ("AS-BUILTS")**

**A. Submission Requirements:**

1. Furnish Owner with original record document prints.
2. Furnish Owner with all as-built information electronically on CD in PDF format.
3. Submit to Architect for review of information and forwarding to Owner for Owner's records.

**B. Project Record Documents required:**

1. Marked-up copies of Contract Drawings.
2. Marked-up copies of Shop Drawings.
3. Marked-up copies of Specifications, addenda and Contract Modifications.
4. Marked-up Product Data submittals.
5. Field records for variable and concealed conditions.
6. Record information on Work that is recorded only schematically.

**C. Maintenance of Documents:**

1. Store record documents in field office apart from Contract Documents used for construction. Do not permit Project Record Documents to be used for construction purposes. Maintain and protect record documents from damage in a clean, dry, legible condition. Make documents available at all times for inspection by Architect.

**D. Record Drawings:**

1. During construction, maintain a set of black-line white-prints of Contract Drawings and Shop Drawings for Project Record Document purposes.
  - a. Mark these Drawings to indicate actual installation where installation varies from installation shown originally. Give particular attention to information on concealed elements which would be difficult to identify or measure and record later. Items required to be marked include but are not limited to:
    - 1) Dimensional changes to Drawings.
    - 2) Revisions to details shown on Drawings.
    - 3) Depths of foundations below first floor.
    - 4) Locations and depths of underground utilities.
    - 5) Revisions to routing of piping and conduits.
    - 6) Revisions to electrical circuitry.
    - 7) Actual equipment locations.
    - 8) Duct size and routing.
    - 9) Locations of concealed internal utilities.
    - 10) Changes made by Contract Modification.
    - 11) Details not on original Contract Drawings.
  - b. Responsibility for Markup and Supervision: Contractor Quality Control Representative; as specified in Section 01 4500 - Quality Control. Where feasible, individual or entity who obtained record data, whether individual or entity is installer, subcontractor, or similar entity, is required to prepare mark-up on Record Drawings.
    - 1) Accurately record information in an understandable Drawing technique.
    - 2) Record data as soon as possible after it has been obtained. In case of concealed installations, record and check mark-up prior to concealment.
    - 3) Contractor Quality Control Representative: Affix signature and certify accuracy of Record Drawings.
  - c. Mark completely and accurately record prints of Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions. Where Shop Drawings are marked, show cross-reference on Contract Drawings location.
  - d. Mark record sets with red erasable colored pencil; use other colors to distinguish between changes for different categories of Work at same location.
  - e. Mark important additional information which was either shown schematically or omitted from original Drawings.
  - f. Note construction change directive numbers, alternate numbers, Contract Modification numbers and similar identification.
  - g. At time of Final Acceptance, submit record Drawings to Architect for Owner records. Organize into sets, bind and label sets for Owner's continued use.
2. Copies and Distribution:
3. After completing preparation of transparency Record Drawings, print (three ) 3 black-line prints of each Drawing, whether or not changes and additional information were recorded. Organize copies into manageable sets. Bind each set with durable paper cover sheets, with appropriate identification, including titles, dates and other information on cover sheets.
  - a. Organize and bind original marked-up set of prints that were maintained during construction in same manner.
  - b. Organize record transparencies into sets matching print sets. Place each set in durable tube-type Drawing containers with end caps. Mark end cap of each container with suitable identification.

1.5 CERTIFICATES OF INSPECTION

- A. HVAC.
- B. Electrical.
- C. Fire Alarm.

1.6 INSTRUCTION OF OWNER'S PERSONNEL

- A. Prior to final inspection or acceptance, fully instruct Owner's designated operating and maintenance personnel in the operation, adjustment, and maintenance of all products, equipment and systems.
- B. Such instructions shall occur at a time designated by the Architect/Engineer at the completion of the job at a meeting set up by the contractor and attended by the representatives of the Owner and manufacturer.
- C. Services of factory instructor or representative to teach Owner's representative on operation of equipment will be arranged by the contractor, shall begin after equipment has been placed in satisfactory operating condition and shall continue for a period of time as deemed necessary by the Architect.
- D. Contractor shall verify in writing that such periods of instruction have been held with the Owner's representative.
- E. Minimum length of training session to be two (2) hours.
- F. Session will need to be videotaped by Contractor for use by Owner.
- G. Notify Architect to attend all training sessions.

**END OF SECTION 01 7800**

**Certification of Asbestos and Lead-Based Paint**  
(Existing Building)

To: TowerPinkster  
Subject: Certification for a building built after 1990  
Facility name: \_\_\_\_\_  
Facility address: \_\_\_\_\_

**Certification for existing building:**

I / We certify under penalty of perjury under the laws of the United States that the following is true and correct. This building was constructed after 1990 and is free of asbestos containing material in excess of 1 percent as defined by applicable US Environmental Protection Agency regulations, and lead-based paint except as specifically listed below. This certification includes all areas of the building(s), including but not limited to; the roof and flooring.

Owner name: \_\_\_\_\_

Signature: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_ Date executed: \_\_\_\_\_

Materials containing asbestos/lead-based paint	Location/room within facility

The penalty for making a false statement is prescribed by 18 USC 1001.

**Certificate of Asbestos and Lead-Based Paint**  
(New Work)

To: TowerPinkster  
Subject: Certification for new construction  
Facility name: \_\_\_\_\_

Facility address: \_\_\_\_\_

**Certification for new construction:**

This Contractor hereby certifies that no asbestos-containing material in excess of 1 percent as defined by applicable US Environmental Protection Agency regulations, and lead-based paint has been furnished or installed at the referenced project.

Contractor name: \_\_\_\_\_

Signature: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_  
Telephone: \_\_\_\_\_

Date executed: \_\_\_\_\_

The penalty for making a false statement is prescribed by 18 USC 1001.

## SECTION 02 4119 - SELECTIVE DEMOLITION

### PART 1 - GENERAL

#### 1.1 REQUIREMENTS INCLUDED

- A. Section Includes:
1. Selective Demolition work included in project.
  2. Project demolition conditions.
  3. Protection

#### 1.2 WORK INCLUDED

- A. The extent of demolition work shown on drawings and specified herein, including, but not limited to:
1. Opening of interior walls, ceilings and floors necessary for proper installation of new materials, equipment, mechanical or electrical items.
  2. Removing interior walls, ceilings, floor finishes.
- B. Interior demolition includes complete wrecking of interior partitions, finishes and structures and removal and disposal of demolished materials, as shown on drawings and herein specified.
- C. The Owner shall have the option of retaining any item removed. The Contractor shall deliver these items to the Owner's designated storage area. Any items not retained by the Owner shall be disposed of offsite by the Contractor. All items are to remain property of the Owner unless specifically designated otherwise.
- D. Some removed items are to be salvaged for re-use. Drawings indicate extent of such work.

### PART 2 - PRODUCTS

- A. Not Applicable

### PART 3 - EXECUTION

#### 3.1 PROJECT DEMOLITION CONDITIONS

- A. Conditions of Structures:
1. The Owner assumes no responsibility for actual conditions of structures to be demolished.
- B. Conditions of the structure existing at time of inspection for bidding purposes will be maintained by Owner in so far as possible. However, variations within structure may occur by Owner's removal and salvage operations prior to start of demolition work.

- C. Pollution Controls:
  - 1. Use water sprinkling, temporary enclosures, and other suitable methods to limit dust and dirt rising and scattering in air to lowest practical level.
  - 2. Comply with governing regulations pertaining to environmental protection.
- D. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.
- E. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing prior to the start of work.
- F. Partial Removal:
  - 1. Items of salvable value to Contractor, and not retained by Owner, may be removed from structure as work progresses. Salvaged items must be transported from site as they are removed.
  - 2. Storage or sale of removed items on site will not be permitted.
  - 3. Store items noted on drawings and specified to be salvaged for use in the project, so as to prevent damage or deterioration.
- G. Disposal of Demolished Materials:
  - 1. Remove from site debris, rubbish, and other materials resulting from demolition operations.
  - 2. Pay all fees related to removal and dumping.
  - 3. Remove and dispose of interior demolition debris off job site.
  - 4. Burning of removed materials from demolished structures will not be permitted.
  - 5. Transport materials removed from demolished structures and dispose of off site.
- H. Traffic:
  - 1. Conduct demolition operations and removal of debris to ensure minimum interference with roads, streets, walks, occupied areas, and other adjacent occupied or used facilities.
  - 2. Do not close or obstruct streets, walks or other occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
- I. Protections:
  - 1. Ensure safe passage of persons around or through area of demolition. Conduct operations to prevent injury to adjacent buildings, structures, other facilities, and persons. Provide protection in accordance with ANSI/NFPA 241.
  - 2. Erect temporary covered passageways as required by the Owner or authorities having jurisdiction.
- J. Use of explosives will not be permitted.
- K. Provide temporary enclosures at doors and other penetrations in walls, necessitated by weather and demolition conditions, and where dust proof partitions are indicated. Enclosures shall be constructed with fire retardant treated lumber, insulated and painted. Joints shall be taped and caulked to prevent dust and debris from migrating beyond construction areas. Maintain enclosures in good repair and remove when no longer needed. Extend partitions to deck.

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- L. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement or collapse of structures to be demolished and adjacent facilities to remain.
- M. Repair any damage to property which is to remain in use, or that of any person, or persons on or off site caused by the demolition work without additional expense to Owner.
- N. Use of jackhammers during normal operating hours of the facility will not be permitted.

**END OF SECTION 02 4119**

## SECTION 07 8413 - PENETRATION FIRESTOPPING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes: Penetration firestopping systems for the following applications:
  - 1. Penetrations in fire-resistance-rated walls.
  - 2. Penetrations in horizontal assemblies.
  - 3. Penetrations in smoke barriers.
- B. Related Requirements:
  - 1. Section 07 8443 "Joint Firestopping" for joints in or between fire-resistance-rated construction, at exterior curtain-wall/floor intersections, and in smoke barriers.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. LEED Submittals:
  - 1. Product Data for Credit IEQ 4.1: For penetration firestopping sealants and sealant primers, documentation including printed statement of VOC content.
  - 2. Laboratory Test Reports for Credit IEQ 4.1: For penetration firestopping sealants and sealant primers, documentation indicating that products comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- C. Product Schedule: For each penetration firestopping system. Include location, illustration of firestopping system, and design designation of qualified testing and inspecting agency.
  - 1. Engineering Judgments: Where Project conditions require modification to a qualified testing and inspecting agency's illustration for a particular penetration firestopping system, submit illustration, with modifications marked, approved by penetration firestopping system manufacturer's fire-protection engineer as an engineering judgment or equivalent fire-resistance-rated assembly. Obtain approval of authorities having jurisdiction prior to submittal.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product test reports.

1.4 CLOSEOUT SUBMITTALS

- A. Installer Certificates: From Installer indicating that penetration firestopping systems have been installed in compliance with requirements and manufacturer's written instructions.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A firm experienced in installing penetration firestopping similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful performance. Qualifications include having the necessary experience, staff, and training to install manufacturer's products per specified requirements. Manufacturer's willingness to sell its penetration firestopping products to Contractor or to Installer engaged by Contractor does not in itself confer qualification on buyer.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install penetration firestopping system when ambient or substrate temperatures are outside limits permitted by penetration firestopping system manufacturers or when substrates are wet because of rain, frost, condensation, or other causes.
- B. Install and cure penetration firestopping materials per manufacturer's written instructions using natural means of ventilations or, where this is inadequate, forced-air circulation.

1.7 COORDINATION

- A. Coordinate construction of openings and penetrating items to ensure that penetration firestopping systems can be installed according to specified firestopping system design.
- B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate penetration firestopping systems.
- C. Do not cover up penetration firestopping installations that will become concealed behind other construction until each installation has been examined by building inspector, if required by authorities having jurisdiction.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics:
  - 1. Perform penetration firestopping system tests by a qualified testing agency acceptable to authorities having jurisdiction.
  - 2. Test per testing standards referenced in "Penetration Firestopping Systems" Article. Provide rated systems complying with the following requirements:
    - a. Penetration firestopping systems shall bear classification marking of a qualified testing agency.

- 1) UL in its "Fire Resistance Directory."
- 2) Intertek Group in its "Directory of Listed Building Products."
- 3) FM Approval in its "Approval Guide."

## 2.2 PENETRATION FIRESTOPPING SYSTEMS

- A. Penetration Firestopping Systems: Systems that resist spread of fire, passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated. Penetration firestopping systems shall be compatible with one another, with the substrates forming openings, and with penetrating items if any.
- B. Penetrations in Fire-Resistance-Rated Walls: Penetration firestopping systems with ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg.
  1. F-Rating: Not less than the fire-resistance rating of constructions penetrated.
- C. Penetrations in Horizontal Assemblies: Penetration firestopping systems with ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg.
  1. F-Rating: At least one hour, but not less than the fire-resistance rating of constructions penetrated.
  2. T-Rating: At least one hour, but not less than the fire-resistance rating of constructions penetrated except for floor penetrations within the cavity of a wall.
  3. W-Rating: Provide penetration firestopping systems showing no evidence of water leakage when tested according to UL 1479.
- D. Penetrations in Smoke Barriers: Penetration firestopping systems with ratings determined per UL 1479, based on testing at a positive pressure differential of 0.30-inch wg.
  1. L-Rating: Not exceeding 5.0 cfm/sq. ft. of penetration opening at and no more than 50-cfm cumulative total for any 100 sq. ft. at both ambient and elevated temperatures.
- E. Exposed Penetration Firestopping Systems: Flame-spread and smoke-developed indexes of less than 25 and 450, respectively, per ASTM E 84.
- F. VOC Content: Penetration firestopping sealants and sealant primers shall comply with the following limits for VOC content:
  1. Sealants: 250 g/L.
  2. Sealant Primers for Nonporous Substrates: 250 g/L.
  3. Sealant Primers for Porous Substrates: 775 g/L.
- G. Low-Emitting Materials: Penetration firestopping sealants and sealant primers shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- H. Accessories: Provide components for each penetration firestopping system that are needed to install fill materials and to maintain ratings required. Use only those components specified by penetration firestopping system manufacturer and approved by qualified testing and inspecting agency for conditions indicated.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of the Work.
- B. General: Install penetration firestopping systems to comply with manufacturer's written installation instructions and published drawings for products and applications.
- C. Install forming materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings.
  - 1. After installing fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not forming permanent components of firestopping.
- D. Install fill materials by proven techniques to produce the following results:
  - 1. Fill voids and cavities formed by openings, forming materials, accessories and penetrating items to achieve required fire-resistance ratings.
  - 2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
  - 3. For fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

#### 3.2 IDENTIFICATION

- A. Wall Identification: Permanently label walls containing penetration firestopping systems with the words "FIRE AND/OR SMOKE BARRIER - PROTECT ALL OPENINGS," using lettering not less than 3 inches high and with minimum 0.375-inch strokes.
  - 1. Locate in accessible concealed floor, floor-ceiling, or attic space at 15 feet from end of wall and at intervals not exceeding 30 feet.

#### 3.3 FIELD QUALITY CONTROL

- A. Owner will engage a qualified testing agency to perform tests and inspections according to ASTM E 2174.
- B. Where deficiencies are found or penetration firestopping system is damaged or removed because of testing, repair or replace penetration firestopping system to comply with requirements.
- C. Proceed with enclosing penetration firestopping systems with other construction only after inspection reports are issued and installations comply with requirements.

**END OF SECTION 07 8413**

## SECTION 09 2900.01 - GYPSUM DRYWALL – STEEL STUD CONSTRUCTION

### PART 1 - GENERAL

#### 1.1 WORK INCLUDED

- A. Gypsum wallboard and gypsum drywall finish as shown on Drawings and specified herein.
- B. Non-load bearing interior partition steel stud construction as shown on Drawings and specified herein.

#### 1.2 QUALITY ASSURANCE

- A. Gypsum wallboard construction shall comply with all laws, ordinances, rules, regulations and orders of public authorities having jurisdiction.
- B. All material shall be from a single manufacturer.
- C. Installation of steel framing members to receive gypsum wallboard shall comply with ASTM C754.

#### 1.3 REFERENCES

- A. Comply with applicable requirements of ANSI/ASTM C 840 for application and finishing of gypsum board, unless otherwise indicated.
- B. Gypsum board terminology standard: GA-505 by Gypsum Association.

#### 1.4 DELIVERY, STORAGE AND HANDLING

- A. All materials shall be delivered to the job in their original, unopened containers or bundles, stored in a place providing protection from damage and exposure to the elements. Remove damaged or otherwise unsuitable material from the job site.

#### 1.5 SUBMITTALS

- A. Product Data: Manufacturer's literature, materials description, cutsheets and recommended installation instructions for systems use.

### PART 2 - PRODUCTS

#### 2.1 GYPSUM BOARD

- A. Gypsum Board (Non-Fire Rated Assemblies):

1. Provide one of the following approved products:
  - a. "Georgia-Pacific"; Gypsum Sheathing.
  - b. "USG"; Sheetrock Gypsum Panels.
  - c. "Certainteed"; M2Tech Gypsum Board.
2. Manufacture to meet specifications for FS SS-L-30, ASTM C 36 and ASTM C 1396.
3. Provide in maximum lengths available to minimize end-to-end butt joints.
4. Standard type, regular gypsum core gypsum board for all areas, except as otherwise indicated. If needed for specified thickness, provide product in Type X gypsum core.
5. Thickness: 5/8 inch or 1/2", as indicated on the Drawings.
6. Width: 4 feet.
7. Length: 8 feet minimum.
8. Edges: Tapered.

B. Gypsum Board (Fire Rated Assemblies-Type X):

1. Provide one of the following approved products:
  - a. "Georgia-Pacific"; Gypsum Sheathing, Type X.
  - b. "USG"; Sheetrock Gypsum Panels, Type X.
  - c. "Certainteed"; M2Tech Gypsum Board, Type X.
2. Manufacture to meet specifications for FS SS-L-30, ASTM C 36 and ASTM C 1396.
3. Provide in maximum lengths available to minimize end-to-end butt joints.
4. Type X gypsum core gypsum board.
5. Thickness: 5/8 inch.
6. Width: 4 feet.
7. Length: 8 feet minimum.
8. Edges: Tapered.
- 9.

2.2 STEEL STUDS

A. Provide Steel Stud Systems, as approved by the Architect, by one of the following manufacturers:

1. "U.S. Gypsum Company" (USG).
2. "National Gypsum Company".
3. "Georgia-Pacific".
4. "Clark Dietrich Building Systems".
5. "Phillips Manufacturing Co.".
6. "Marino/Ware".
7. "CEMCO Steel".
8. "Flex-Ability Concepts".
9. "MBA Metal Framing".
10. "Dale/Incor".
11. "Superior Steel Studs".

B. System Components:

1. With each type of metal stud and joist required, provide manufacturer's standard runners (tracks), shoes, clips, ties, stiffeners, fasteners, grommets to protect electrical wiring, door jamb reinforcers and accessories as recommended by the manufacturer for the applications indicated, and as needed to provide a complete metal stud system. Where special types, conditions, or products are indicated, provide as required to match gauge, depth and section of associated wall construction.

C. Non-Load Bearing Screw Type Steel Studs:

1. Manufacturer's standard formed light gauge steel studs of the height, size, and gauge indicated, with punched webs to facilitate erection of system and passage of mechanical/electrical service lines. Lateral loading shall have a minimum of 5 lbs. per sq. ft.
2. Steel stud framing at interior partitions:
  - a. Gauge: minimum 20 gauge and 30 mils thickness, ASTM C645.
  - b. Depth of Section: 3-5/8 inches, unless otherwise indicated on drawings.
  - c. Flange width: Not less than 1.25 inches.
  - d. Shape: Cee shape (returned flanges).
  - e. Steel and Finish: ASTM A591, commercial quality electrolytic zinc coated steel, class B.
  - f. Face of flanges: Knurled to facilitate use of self-tapping fasteners.
  - g. Use 1-1/2 inches cold rolled channel at 48 inches o.c. horizontally above interior ceiling.
  - h. Floor and Ceiling Tracks: Cold formed channel shape, galvanized, width as required to receive studs, and flange/leg size not less than 1.25 inches.
  - i. Double 20 gauge studs at all door and window jambs.

D. Furring Channels or Strips:

1. 7/8" or 1-1/2", as indicated on Drawings. If not indicated, provide 1-1/2".
2. 20 gauge, minimum.
3. Cee shape or Hat Channel profile.

## 2.3 MATERIALS AND COMPONENTS

A. Fasteners:

1. Type S and S-12 screws, bugle head or pan head.
2. Sized to provide 3/8 inch penetration beyond thickness of wallboard.

B. Accessories:

1. Corner reinforcements, casing beads and metal trim, fabricated from 26 gauge galvanized sheet steel with perforated flanges, designed to receive joint compound.

C. Control Joints:

1. "USG", "No. 093".

D. Hangar Wires:

1. ASTM A-641, 12 gauge, 0.475 lbs/ft.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION OF WALLBOARD

##### A. Single Layer Wallboard – Metal Stud Partitions:

1. Secure metal runners to concrete slabs with power driven anchors, space 24 inches o.c.
2. Space metal studs 16 inches o.c. and locate studs at door and window frames, partition intersections and corners. Locate studs within 2 inches of all door-frame jams and anchor to jamb and head anchor clips of frame by screw attachment. Over frames a cut-to-length stud extending from door frame header to ceiling runner shall be positioned over vertical joints over door frame. Anchor all frames at jamb anchor clips, after stud and before gypsum wallboard is installed.
3. Sound attenuation blankets shall be pressure-fit between studs.
4. Apply single layer wallboard face out with long dimension vertical. All abutting ends and edges shall occur over stud on different studs. Screws shall be spaced 12 inches o.c. in field of board and 8 inches o.c. staggered along vertical edges.
5. Use single panel to span entire length of width of surface where possible.
6. Stagger end joints when they occur.
7. Locate end joints as far as possible from center of wall or ceiling.
8. Butt wallboards without forcing
9. Support ends and edges of wallboard panels on framing or furring members.

##### B. Accessories:

1. Corner beads shall be installed on all exterior corners attached with suitable fasteners spaced 9 inches o.c. on both sides, and shall be in single lengths unless corner exceeds standard stock lengths.
2. Metal trim shall be installed over face-layer wallboard, attached with suitable fasteners spaced 9 inches o.c. and shall be in single lengths unless application length exceed standard stock lengths.
3. Wallboard screws shall be applied with an electric driver.
4. Provide control joints at maximum 28'-0" o.c. If additional shrinkage cracks occur, install control joints and patch cracks.

##### C. Joint Treatment:

1. Finish all joints and interior corners with joint tape and joint compound.
  - a. Apply joint compound sufficiently thick to hide board surface at angles and joints. Cover nail/screw heads and depressions with compound.
  - b. Apply tape, squeeze out excess compound and cover tape with compound.
  - c. When first coat has thoroughly dried apply two coats of compound, extending each coat slightly beyond previous coat. Sand to smooth, flat surface, ready for specified finish.

##### D. Finish:

1. Level 4 finish at all exposed areas.
2. Level 2 finish at concealed areas (above ceilings, draftstopping).
3. No textured walls or ceilings.

**3.2 CLEANING**

- A. Remove soil, stain caused by drywall installation.

**SUBMITTAL CHECKLIST**

- 1. Product Data.

**END OF SECTION 09 2900.01**

## SECTION 09 5113 - ACOUSTICAL CEILINGS

### PART 1 - GENERAL

#### 1.01 WORK INCLUDED

- A. Extent of acoustical ceilings as shown and scheduled on the Drawings.
- B. Types of acoustical ceilings specified in this Section include the following:
  - 1. Acoustical panel ceilings, exposed grid suspension.

#### 1.02 QUALITY ASSURANCE

- A. UL Fire Hazard Classification:
  - 1. Where acoustical ceilings are indicated to comply with fire hazard classification provide acoustical materials which have been tested, rated and labeled by UL for indicated ratings.
  - 2. Classification: Maximum of 25 for flame spread.
- B. Sound and Noise Classification:
  - 1. Provide systems with NRC ratings in accordance with ASTM C423 and STC ratings in accordance with AMA1-II, as tested by an independent agency.

#### 1.03 SUBMITTALS

- A. Product Data:
  - 1. Manufacturer's product data sheets, cutsheets, specifications and installation instructions.
- B. Samples:
  - 2. Where colors are specified, submit one sample of each type of acoustical unit and suspension system member.
  - 3. Where colors are not specified, or are specified as "to be selected", submit samples showing manufacturer's full range of standard colors for each type acoustical unit and suspension system.
  - 4. Submit additional or larger samples of selected colors upon request.

#### 1.04 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to the site in manufacturers original, unopened packages, with labels intact. Store and handle to avoid damage and exposure to elements. Remove damaged or otherwise unsuitable material from job site.

1.05 MAINTENANCE MATERIALS AND DATA

- C. See Specification Section 01 7846 - Closeout Maintenance Materials.
- D. Submit maintenance data under provisions of Section 01 7800 - Closeout Submittals.

1.06 PROJECT CONDITIONS

- E. Do not install acoustical ceilings until space is enclosed and weatherproof, and until wet-work in space is completed, and until temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Provide ceiling panels, as approved by the Architect, by one of the following manufacturers:
  - 1. "Armstrong"
  - 2. "U.S. Gypsum" (USG)
  - 3. "Celotex"
  - 4. "National Gypsum Company" (NGC)
  - 5. "Certainteed"
- B. Provide suspension systems from same manufacturer as the ceiling panel, as approved by the Architect, or by one of the following manufacturers:
  - 1. "Armstrong"
  - 2. "U.S. Gypsum/Donn Ceilings"
  - 3. "Chicago Metallic Corporation"

2.02 CEILING SYSTEMS

- A. Provide the following acoustical ceiling systems as indicated on the Drawings:
  - 1. SPECIFIER: Select or specify ceiling type systems below
  - 2. Panel and Suspension System.
  - 3. (Lay-in, 2'x2', Match existing color, texture, edge type, etc.)

2.03 CEILING SUSPENSION MATERIALS

- A. Comply with ASTM C 635, as applicable to type of suspension system required for type of ceiling units indicated. Coordinate with other work supported by or penetrating through ceilings, including light fixtures, and HVAC equipment.

- B. Structural Class:
  - 1. Intermediate-duty system.
- C. Attachment Devices:
  - 1. Size for 5 times design load indicated in ASTM C 635, Table 1, Direct Hung.
- D. Hanger Wires:
  - 1. Galvanized carbon steel, ASTM A 641, soft temper, pre-stretched, yield-stress load of at least 3 times design load, but not less than 12 gauge (0.106 inch).
- E. Type of System:
  - 1. Either direct-hung or indirect hung suspension system, as required to meet performance requirements.
- F. Carrying Channels:
  - 1. 1-1/2 inch steel channels, hot-rolled or cold-rolled, not less than 0.475 lbs. per lineal ft.
- G. Edge Moldings:
  - 1. Manufacturer's standard channel molding for edges and penetrations of ceiling, with single flange of molding exposed.
  - 2. 15/16 inch minimum exposed leg, finish to match grid finish.
- H. Exposed Suspension System:
  - 1. Manufacturer's standard exposed runners, cross-runners and accessories, of double web types and profiles indicated, with exposed cross runners coped to lay flush with main runners.
  - 2. Provide uniform factory-applied finish on exposed surfaces of ceiling suspension systems, including moldings, trim and accessories.
  - 3. Manufacturer's standard baked polyester finish, low gloss, color as selected.

### PART 3 - EXECUTION

#### 3.01 PREPARATION

- A. Furnish layouts for inserts, clips or other supports required to be installed by other trades for support of acoustical ceilings.
- B. Establish layout of acoustical units in compliance with reflected ceiling plan. Balance border widths at opposite edges of each ceiling. Avoid use of less-than-half width units at borders.

**3.02 INSTALLATION**

- A. Install materials in accordance with manufacturer's printed instructions, and to comply with governing regulations, fire resistance rating requirements as indicated, and industry standards applicable to work.
- B. Install all acoustical units with grain in one plane and direction.
- C. Install suspension systems to comply with ASTM C 636, with hangers supported only from building structural members. Locate hangers near each end and spaced 4'-0" along each carrying channel or direct-hung runner, unless otherwise indicated, leveling to tolerance of 1/8 inch in 12'-0".
- D. Install edge moldings of type indicated at perimeter of acoustical ceiling area and at locations where necessary to conceal edges of acoustical units.
  - 1. Sealant Bed: Apply continuous ribbon of acoustical sealant, concealed on back of vertical leg before installing moldings.
  - 2. Screw-attach moldings to substrate at intervals not over 16 inches o.c. and not more than 3 inches from ends, leveling with ceiling suspension system to tolerance of 1/8 inch in 12'-0". Miter corners accurately and connect securely.
- E. Install panels in coordination with suspension system, with edges concealed by support of suspension members. Scribe and cut panels to fit accurately at borders and at penetrations.
- F. Install hold-down clips in areas indicated, and in areas where required by governing regulations or for fire resistance ratings; space as recommended by panel manufacturer, unless otherwise indicated or required.

**3.03 ADJUST AND CLEAN**

- A. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members; comply with manufacturer's instructions for cleaning and touch-up of minor finish damage.
- B. Remove and replace work which cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

**SUBMITTAL CHECKLIST**

- 1. Product Data.
- 2. Samples.

**END OF SECTION 09 5113**

## SECTION 27 0500 – COMMON WORK RESULTS FOR COMMUNICATIONS

### PART 1 - GENERAL

#### 1.1 Documents

- A. This section of the of the specification is part of the contract documents and is to be read, interpreted and coordinated with all other parts.

#### 1.2 Summary

- A. Section Includes:
  - 1. Overview
  - 2. Abbreviations
  - 3. Contractor Qualifications
  - 4. Standards and Guidelines
  - 5. Quality Assurance
  - 6. Permits and Inspections
  - 7. Low Voltage Cable Bundling

#### 1.3 Overview

- A. This document must be read, interpreted and coordinated with all other related specifications to deliver a complete Telecommunications infrastructure system.
- B. This specification prescribes mandatory requirements for the Telecommunications infrastructure system.
- C. A structured approach is specified which will ensure a flexible distribution system that will minimize the future costs of moves, additions and changes.
- D. The Contractor will supply, furnish, and install all material, labor, tools, equipment and services required for construction and put into regular operation the complete Telecommunications system as shown on the Telecommunications drawings, described in the specifications, and any attached appendices.
- E. Any and all proposed changes to this specification shall be subject to approval in writing to the Architect prior to implementation.

#### 1.4 Abbreviations

- A. 8P8C: 8-position, 8-contact
- B. ANSI: American National Standards Institute
- C. ASTM: American Society for Testing and Materials

- D. 10Gig: 10-Gig Active Ethernet
- E. 10GPON: 10-Gigabit Symmetrical Passive Optical Network
- F. A/V: Audio Visual
- G. AC: Alternating Current
- H. AHJ: Authority Having Jurisdiction
- I. APC: Angled Physical Contact
- J. BICSI: Building Industry Consulting Service International.
- K. Coated RMC: PVC Coated Rigid Metallic Conduit
- L. DC: Direct Current
- M. EF: Entrance Facility
- N. EIA: Electronic Industries Alliance
- O. EMI: Electromagnetic Interference
- P. EMT: Electrical Metallic Tubing
- Q. ENT: Electrical Non-metallic Tubing
- R. ER: Equipment Room
- S. GRC: Galvanized rigid steel conduit
- T. IDF: Intermediate Distribution Frame
- U. IP: Internet Protocol
- V. IMC: Intermediate metal conduit
- W. LAN: Local Area Network
- X. MDF: Main Distribution Frame
- Y. MPTL: Modular Plug Terminated Link
- Z. NTP: Network Time Protocol
- AA. OSP: Outside Plant Wiring
- BB. PDU: Power Distribution Unit
- CC. PoE: Power over Ethernet

- DD. RCDD: Registered Communications Distribution Designer (BICSI)
- EE. RGS: Rigid Galvanized Steel
- FF. RU: Rack Unit
- GG. SFP: Small Form Pluggable
- HH. SMF: Single Mode Fiber
- II. STP: Shielded Twisted Pair
- JJ. TDMM: Telecommunications Distribution Methods Manual (BICSI)
- KK. TECH: Technician (BICSI Certified)
- LL. TI: Technology Integrator
- MM. TIA: Telecommunications Industry Association
- NN. TR: Telecommunications Room
- OO. UL: Listed by Underwriters Laboratories (United States)
- PP. UPC: Ultra Physical Contact
- QQ. UPS: Uninterruptable Power Supply
- RR. UTP: Unshielded Twisted Pairs
- SS. WAO: Work Area Outlet
- TT. WAP: Wireless Access Point

#### 1.5 Contractor Qualifications

- A. The Contractor will have experience in the installation and testing of similar systems as specified herein and will have completed at least two projects of similar size and scope within the last 24 months. The contractor will provide references upon request (including the project name, address, date of implementation, client name, title, telephone number and project description).
- B. All members of the installation team must be certified by the Manufacturer as having completed the necessary training to complete their part of the installation. All personnel will be adequately trained in the use of such tools and equipment as required.
- C. The Contractor must be certified to install a certified fire-stop system.
- D. The Contractor will own and maintain tools, installation equipment, and test equipment necessary for successful installation and testing of optical and Category 6 and 6a premise distribution systems.

- E. The Contractor must maintain a state Contractor's license as required by the state.
- F. The Contractor's lead installer shall have a current BICSI TECH certification and shall be onsite for the duration of the project.

1.6 Standards and Guidelines

- A. The following organizations publish telecommunications construction standards with provisions that, through reference in this text, constitute provisions of this Document. At the time of publication of this Document, the editions of the standards published by the organizations indicated were valid. Installers of telecommunications and networking services for this project must adhere to the telecommunication standards published by these organizations, all standards are subject to revision; parties to agreements based on this Document shall apply the most recent editions of the standards published by the organizations indicated.

- 1. Federal Communications Commission (FCC)
- 2. Institute of Electrical and Electronics Engineers, Inc (IEEE)
- 3. National Fire Protection Association (NFPA)
- 4. National Electrical Safety Code (NESC)
- 5. American National Standards Institute (ANSI)
- 6. Telecommunications Industry Association (TIA)
- 7. Electronic Industries Alliance (EIA)
- 8. Building Industry Consulting Service International (BICSI)

- B. Applicable Standards and Guidelines

- 1. The following list of methods and standards included are considered part of this specification. This is a list of primary references and does not limit the applicability of other standards that are incorporated into the work described in these specifications. They incorporate generally accepted communications infrastructure practices described in Standards documents (and addenda) published by recognized standards bodies and organizations. These include standards published by the Telecommunications Industry Association/Electronics Industries Alliance (TIA/EIA) and Building Industry Consultant Services International (BICSI).
  - a. ANSI/TIA/ EIA 568E, Commercial Building Telecommunications Cabling Standard  
This prescribes the requirements for Intrabuilding copper and optical fiber cable performance, installation and testing
  - b. ANSI/TIA/EIA 569E, Telecommunication Standard for Pathways and Spaces. This standard includes specifications for the design and construction of pathways and spaces within buildings required to support information technology equipment and cable media.
  - c. ANSI/TIA/EIA 607-E, Commercial Building Grounding and Bonding Requirement. This document includes the components of an effective grounding system for communication systems within public and commercial buildings.
  - d. ANSI/TIA/EIA 758-B, BICSI Customer Owned Outside Plant Telecommunications Cabling
  - e. Standard. This standard provides specifications for Interbuilding communication facilities that
  - f. include cable media, pathways and spaces.
  - g. ANSI/TIA/EIA 862-C, Building Automation Systems Cabling Standard for Commercial Buildings. This standard describes the generic cable system for building automation systems (BAS) that are intended to support a multi-product, multi-vendor automation environment within public and commercial buildings.

- h. Building Industry Consulting Services International (BICSI) Telecommunications Distribution Methods Manual, 15th Edition. This is a manual of proven design guidelines and methods accepted by the telecommunications industry.
- i. ANSI/NFPA 70, National Electrical Code, (NEC) Current Edition. In addition to standards related to electrical safety, the NEC has several sections that specifically address low voltage cable installation.

#### 1.7 Quality Assurance

- A. The latest National Electrical Code shall be observed and shall govern the character of work, style, quantity and the size of all material used.
- B. All materials shall conform with the standards of the Underwriter's Laboratories in every case where such standards have been established for the particular type of material in question.
- C. All material and equipment shall be UL listed and bear the UL label where such listing and labeling exists.
- D. The complete electrical installation shall comply with all the requirements of the MI.O.S.H.A.
- E. Codes shall be used as minimum requirements, and where the Specifications or Plans call for an installation that exceeds and does not violate the Code requirements, the Specifications and Plans shall be followed.

#### 1.8 Permits and Inspections

- A. The Contractor shall obtain and pay for all permits required by the State of Michigan Labor Department, Electrical Division.
- B. The Contractor shall submit, to precede request for final payment, a copy of the Certificate of Inspection as required by the State of Michigan.

#### 1.9 Low Voltage Cable Bundling

##### A. Cable Ties

- 1. Cable ties shall not be allowed for the final bundling of data, security and audio/video cables.
  - a. Cable ties can be used on a temporary basis during cable installation.
  - b. All cable ties shall be removed after temporary use.
  - c. All temporary zip ties shall be plenum rated, where required.

##### B. Hook and Loop

- 1. Hook & Loop (also known as Velcro) shall be used in final data, security and audio/video cable installations.
  - a. All low voltage cables shall be bundled neatly using hook & loop.
  - b. Hook & Loop shall be black except in exposed areas or otherwise noted in drawings and/or specifications.
  - c. The Hook & Loop color in exposed areas shall be approved by Architect prior to installation.
  - d. All Hook & Loop shall be a minimum of 3/4" in width.

- e. All Hook & Loop shall be plenum rated, where required.

END OF SECTION 27 0500

## SECTION 27 0526 - GROUNDING AND BONDING FOR COMMUNICATIONS SYSTEMS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Grounding conductors.
  - 2. Grounding connectors.
  - 3. Grounding busbars.
  - 4. Grounding rods.
  - 5. Grounding labeling.

#### 1.2 STANDARDS

- A. Comply with ANSI/TIA-607-E.
  - 1. At the time of publication of this Document, the editions of the standards published by the organization were valid. Installers of telecommunications and networking services for this project must adhere to the telecommunication standards published by this organization, all standards are subject to revision.

#### 1.3 DEFINITIONS

- A. TBC: Telecommunications Bonding Conductor
- B. SBB: Secondary Bonding Busbar
- C. PBB: Primary Bonding Busbar
- D. BBC: Bonding Backbone Conductor
- E. RBB: Rack Bonding Busbar

#### 1.4 ACTION SUBMITTALS

- A. Grounding Conductors
- B. Grounding Connectors
- C. Grounding Busbars
- D. Grounding Rods
- E. Grounding Labeling

1.5 CLOSEOUT SUBMITTALS

- A. As-built Drawings.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Cabling Installer shall have personnel certified by BICSI on staff.
1. Layout Responsibility: Preparation of Shop Drawings, cabling administration Drawings, and field-testing program development by a BICSI TECH.
  2. Installation Supervision: Installation shall be under the direct supervision of a BICSI TECH, who shall be present at all times when Work of this Section is performed at Project site.
  3. Testing Supervisor: Currently certified by BICSI as a TECH to supervise on-site testing.

1.7 COORDINATION

- A. Coordinate layout and installation of telecommunications pathways and cabling with Owner's telecommunications and LAN equipment and service suppliers.

PART 2 - PRODUCTS

2.1 GROUNDING CONDUCTORS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Harger Lightning and Grounding.
  2. Panduit Corp.
  3. Chatsworth Products
- B. Comply with UL 486A-486B.
- C. Insulated Conductors: Stranded copper wire, green or green with yellow stripe insulation, insulated for 600 V, and complying with UL 83.
1. Ground wire for custom-length equipment ground jumpers shall be No. 6 AWG, 19-strand, UL-listed, Type THHN wire.
  2. Cable Tray Equipment Grounding Wire: No. 6 AWG.
- D. Bare Copper Conductors:
1. Solid Conductors: ASTM B 3.
  2. Stranded Conductors: ASTM B 8.
  3. Tinned Conductors: ASTM B 33.
  4. Sizes and types of conductors in three subparagraphs below are typical examples. 28-kcmil bonding cable in "Bonding Cable" Subparagraph is slightly larger than No. 6 AWG.
  5. Bonding Cable: 28 kcmils, 14 strands of No. 17 AWG conductor, and 1/4 inch in diameter.
  6. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.

7. Bonding Jumper: Tinned-copper tape, braided conductors terminated with two-hole copper ferrules; 1-5/8 inches wide and 1/16 inch thick.

## 2.2 GROUNDING CONNECTORS

- A. Irreversible connectors listed for the purpose. Listed by an NRTL as complying with NFPA 70 for specific types, sizes, and combinations of conductors and other connected items. Comply with UL 486A-486B.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  1. Burndy; Part of Hubbell Electrical Systems.
  2. Chatsworth Products, Inc.
  3. Harger Lightning and Grounding.
  4. Panduit Corp.
- C. Compression Wire Connectors: Crimp-and-compress connectors that bond to the conductor when the connector is compressed around the conductor. Comply with UL 467.
  1. Electroplated tinned copper, C and H shaped.
- D. Busbar Connectors: Cast silicon bronze, solderless compression-type, mechanical connector; with a long barrel and two holes spaced on 5/8- or 1-inch centers for a two-bolt connection to the busbar.
- E. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

## 2.3 GROUNDING BUSBARS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  1. Chatsworth Products, Inc.
  2. Harger Lightning and Grounding.
  3. Panduit Corp.
- B. PBB: Predrilled, wall-mounted, rectangular bars of hard-drawn solid copper, 1/4 by 4 inches in cross section, length as indicated on Drawings. The busbar shall be NRTL listed for use as PBB and shall comply with TIA-607-E.
  1. Predrilling shall be with holes for use with lugs specified in this Section.
  2. Mounting Hardware: Stand-off brackets that provide a 2-inch
  3. Stand-off insulators for mounting shall be Lexan or PVC. Comply with UL 891 for use in 600-V switchboards, impulse tested at 5000 V.
- C. SBB: Predrilled rectangular bars of hard-drawn solid copper, 1/4 by 2 inches in cross section, length as indicated on Drawings. The busbar shall be for wall mounting, shall be NRTL listed as complying with UL 467, and shall comply with TIA-607-E.
  1. Predrilling shall be with holes for use with lugs specified in this Section.
  2. Mounting Hardware: Stand-off brackets that provide at least a 2-inch

3. Stand-off insulators for mounting shall be Lexan or PVC. Comply with UL 891 for use in 600-V switchboards, impulse tested at 5000 V.
- D. Rack and Cabinet Grounding Busbars: Rectangular bars of hard-drawn solid copper, accepting conductors ranging from No. 14 to No. 2/0 AWG, NRTL listed as complying with UL 467, and complying with TIA-607-E. Predrilling shall be with holes for use with lugs specified in this Section.
1. Cabinet-Mounted Busbar: Terminal block, with stainless-steel or copper-plated hardware for attachment to the cabinet.
  2. Rack-Mounted Horizontal Busbar: Designed for mounting in 19- or 23-inch equipment racks. Include a copper splice bar for transitioning to an adjoining rack, and stainless-steel or copper-plated hardware for attachment to the rack.
  3. Rack-Mounted Vertical Busbar: 72 or 36 inches stainless-steel or copper-plated hardware for attachment to the rack.

## 2.4 GROUND RODS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Harger Lightning and Grounding.
  2. Erico
- B. Ground Rods: Copper-clad steel, sectional type; 3/4 inch by 10 feet in diameter.

## 2.5 GROUNDING LABELING

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Brother International Corporation.
  2. Dymo.
  3. Panduit Corp.
- B. Comply with TIA-606-Band UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.
- C. Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch. Overlay shall provide a weatherproof and UV-resistant seal for label.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine the ac grounding electrode system and equipment grounding for compliance with requirements for maximum ground-resistance level and other conditions affecting performance of grounding and bonding of the electrical system.
- B. Inspect the test results of the ac grounding system measured at the point of TBC connection.

- C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- D. Proceed with connection with the TBC only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Bonding shall include the ac utility power service entrance, the communications cable entrance, and the grounding electrode system. The bonding of these elements shall form a loop so that each element is connected to at least two others.
- B. Comply with NECA 1.
- C. Comply with TIA-607-E.

### 3.3 APPLICATION

- A. Conductors: Install solid conductor for No. 8 AWG and smaller and stranded conductors for No. 6 AWG and larger unless otherwise indicated.
  - 1. The bonding conductors between the SBB and structural steel of steel-frame buildings shall not be smaller than No. 6 AWG.
  - 2. The bonding conductors between the PBB and structural steel of steel-frame buildings shall not be smaller than No. 6 AWG.
- B. Underground Grounding Conductors: Install bare copper conductor, No. 2 AWG minimum.
- C. Conductor Terminations and Connections:
  - 1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
  - 2. Underground Connections: Welded connectors except at test wells and as otherwise indicated.
  - 3. Connections to Ground Rods at Test Wells: Bolted connectors.
  - 4. Connections to Structural Steel: Welded connectors.
- D. Conductor Support:
  - 1. Secure grounding and bonding conductors at intervals of not less than 36 inches
- E. Grounding and Bonding Conductors:
  - 1. Install in the straightest and shortest route between the origination and termination point, and no longer than required. The bend radius shall not be smaller than eight times the diameter of the conductor. No one bend may exceed 90 degrees.
  - 2. Install without splices.
  - 3. Support at not more than 36-inch intervals.
  - 4. Install grounding and bonding conductors in 3/4-inch PVC conduit until conduit enters a telecommunications room. The grounding and bonding conductor pathway through a plenum shall be in EMT. Conductors shall not be installed in EMT unless otherwise indicated.
    - a. If a grounding and bonding conductor is installed in ferrous metallic conduit, bond the conductor to the conduit using a grounding bushing that complies with requirements in

Section 27 0528 "Pathways for Communications Systems," and bond both ends of the conduit to an SBB.

### 3.4 GROUNDING ELECTRODE SYSTEM

- A. The TBC between the PBB and the ac service equipment ground shall not be smaller than No. 1/0 AWG.

### 3.5 GROUNDING BUSBARS

- A. Indicate locations of grounding busbars on Drawings. Install busbars horizontally, on insulated spacers 2 inches minimum from wall, minimum 12 inches above finished floor unless otherwise indicated.
- B. Where indicated on both sides of doorways, route bus up to top of door frame, across top of doorway, and down; connect to horizontal bus.

### 3.6 CONNECTIONS

- A. Bond metallic equipment in a telecommunications equipment room to the grounding busbar in that room, using equipment grounding conductors not smaller than No. 6 AWG.
- B. Stacking of conductors under a single bolt is not permitted when connecting to busbars.
- C. Assemble the wire connector to the conductor, complying with manufacturer's written instructions and as follows:
  - 1. Use crimping tool and the die specific to the connector.
  - 2. Pretwist the conductor.
  - 3. Apply an antioxidant compound to all bolted and compression connections.
- D. Primary Protector: Bond to the PBB with insulated bonding conductor.
- E. Interconnections: Interconnect all SBBs with the PBB with the telecommunications backbone conductor. If more than one PBB is installed, interconnect PBBs using the backbone bonding conductor. The telecommunications backbone conductor and backbone bonding conductor size shall not be less than 2 kcmils/linear foot of conductor length, up to a maximum size of No. 3/0 AWG (168 kcmils) unless otherwise indicated.
- F. Telecommunications Enclosures and Equipment Racks: Bond metallic components of enclosures to the telecommunications bonding and grounding system. Install top-mounted rack grounding busbar unless the enclosure and rack are manufactured with the busbar. Bond the equipment grounding busbar to the SBB No. 2 AWG bonding conductors.
- G. Structural Steel: Where the structural steel of a steel frame building is readily accessible within the room or space, bond each SBB and PBB to the vertical steel of the building frame.
- H. Electrical Power Panelboards: Where an electrical panelboard for telecommunications equipment is located in the same room or space, bond each SBB to the ground bar of the panelboard.

- I. Shielded Cable: Bond the shield of shielded cable to the SBB in communications rooms and spaces. Comply with TIA-568.1-E when grounding screened, balanced, twisted-pair cables.
- J. Rack- and Cabinet-Mounted Equipment: Bond powered equipment chassis to the cabinet or rack grounding bar. Power connection shall comply with NFPA 70; the equipment grounding conductor in the power cord of cord- and plug-connected equipment shall be considered as a supplement to bonding requirements in this Section.
- K. Access Floors: Bond all metal parts of access floors to the SBB.

### 3.7 IDENTIFICATION

- A. Labels shall be preprinted or computer-printed type.
  - 1. Label PBB(s) with "fs-PBB," where "fs" is the telecommunications space identifier for the space containing the PBB.
  - 2. Label SBBs) with "fs-SBB," where "fs" is the telecommunications space identifier for the space containing the SBB.
  - 3. Label the TBC and each telecommunications backbone conductor at its attachment point: "WARNING! TELECOMMUNICATIONS BONDING CONDUCTOR. DO NOT REMOVE OR DISCONNECT!"

### 3.8 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Tests and Inspections:
  - 1. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.
  - 2. Test the bonding connections of the system using an ac earth ground-resistance tester, taking two-point bonding measurements in each telecommunications equipment room containing a PBB and a SBB and using the process recommended by BICSI TDMM. Conduct tests with the facility in operation.
    - a. Measure the resistance between the busbar and the nearest available grounding electrode. The maximum acceptable value of this bonding resistance is 100 milliohms.
  - 3. Test for ground loop currents using a digital clamp-on ammeter, with a full-scale of not more than 10 A, displaying current in increments of 0.01 A at an accuracy of plus/minus 2.0 percent.
    - a. With the grounding infrastructure completed and the communications system electronics operating, measure the current in every conductor connected to the PBB and in each SBB. Maximum acceptable ac current level is 1 A.
- C. Excessive Ground Resistance: If resistance to ground at the TBC exceeds 5 ohms, notify Architect promptly and include recommendations to reduce ground resistance.
- D. Grounding system will be considered defective if it does not pass tests and inspections.

**PROJECT NO. 26064.003**  
**IVY TECH COMMUNITY COLLEGE - OGLE HALL AV UPGRADES**  
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E. Prepare test and inspection reports.

**END OF SECTION 27 0526**

## SECTION 27 0528 - PATHWAYS FOR COMMUNICATIONS SYSTEMS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Work covered by this Section shall consist of furnishing labor, equipment, supplies, materials, and testing unless otherwise specified, and in performing the following operations recognized as necessary for the installation of pathways as described on the Drawings and/or required by these specifications.
- B. Section Includes:
  - 1. Non-Continuous Cable Supports.
  - 2. Conduits and Sleeves
  - 3. Hook & Loop (Velcro)
- C. Related Requirements:
  - 1. Division 26 Section "Raceways and Boxes for Electrical Systems" for conduits, wireways, surface raceways, boxes, enclosures, cabinets, handholes, and faceplate adapters serving electrical systems.
  - 2. Division 28 Section "Pathways for Electronic Safety and Security" for conduits, surface pathways, innerduct, boxes, and faceplate adapters serving electronic safety and security.

#### 1.2 ACTION SUBMITTALS

- A. Non-Continuous Cable Supports
- B. Conduits & Sleeves
- C. Hook & Loop (Velcro)
  - 1. Refer to specification 27 500 "Common Work Results for Communications."

#### 1.3 CLOSEOUT SUBMITTALS

- A. As-built Drawings.

#### 1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Cabling Installer shall have personnel certified by BICSI on staff.
  - 1. Layout Responsibility: Preparation of Shop Drawings, cabling administration Drawings, and field-testing program development by a BICSI TECH.
  - 2. Installation Supervision: Installation shall be under the direct supervision of a BICSI TECH, who shall be present at all times when Work of this Section is performed at Project site.

## PART 2 - PRODUCTS

### 2.1 NON-CONTINUOUS CABLE SUPPORTS

#### A. General Requirements for non-continuous cable supports:

1. Shall be UL Listed
2. Shall provide a bearing surface of sufficient width to comply with required bend radii of high-performance cables per ANSI/TIA 568-E
3. Shall have flared edges to prevent damage while installing cables Comply with TIA-569-E.
4. Shall have a cable retainer wire form to provide containment of cables within the hanger. The cable retainer shall be removable and reusable.
5. Shall have a hot-dipped galvanized or G60 finish and shall be rated for indoor use in non-corrosive environments.
6. Non-continuous cable supports shall be a minimum of 2-inches.
7. Approved products:
  - a. PENTAIR CADDY CAT32HP, CAT48HP, CAT64HP.

### 2.2 Conduits & Sleeves

#### A. General Requirements for conduits and sleeves:

1. Conduit/Sleeve Installation – A conduit and/or sleeve shall be installed at every location where a cable enters, penetrates, or passes through a wall.
2. Rating Requirements – The conduit and/or sleeve shall be rated for the specific space in which it is installed.
3. Securement – The conduit and/or sleeve shall be securely fastened in place using appropriate mechanical hardware or approved adhesive.
4. Firestopping – The conduit and/or sleeve shall be properly fire stopped as required by applicable codes and standards.
5. All metallic conduit and/or sleeve shall have a plastic bushing installed prior to any cable installation.

### 2.3 HOOK & LOOP (VELCRO)

- #### A. Refer to specification 27 500 “Common Work Results for Communications.”

## PART 3 - EXECUTION

### 3.1 INSTALLATION

1. Installation and configuration shall conform to the requirements of the current revision levels of ANSI/ EIA/TIA Standards 568 & 569, NFPA 70 (National Electrical Code), applicable local codes, and to the manufacturer’s installation instructions.

2. Install cables using techniques, practices, and methods that are consistent with Category 5e or higher requirements and that supports Category 5e or higher performance of completed and linked signal paths, end to end.
  3. Install cables without damaging conductors, shield, or jacket.
  4. Do not bend cables, in handling or in installing, to smaller radii than minimums recommended by manufacturer or by TIA 568.
  5. Pull cables without exceeding cable manufacturer's recommended pulling tensions or outlined in TIA 569. Use pulling means that will not damage media.
  6. Do not exceed load ratings specified by manufacturer.
  7. Non-continuous supports shall be installed a minimum 3 inches above ceilings.
  8. Non-continuous supports shall be installed so there is no more than 5ft between supports, measured horizontally.
- B. Comply with NECA 1, NECA 101, and TIA-569-E for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum pathways. Comply with NFPA 70 limitations for types of pathways allowed in specific occupancies and number of floors.
- C. Keep pathways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal pathway runs above water and steam piping.
- D. Arrange stub-ups so curved portions of bends are not visible above finished slab.
- E. Install no more than the equivalent of two 90-degree bends in any pathway run. Support within 12 inches of changes in direction. Utilize long radius ells for all optical-fiber cables.
- F. Conceal conduit and EMT within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.
- G. Pathways Embedded in Slabs:
1. Run conduit larger than 1-inch trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support. Secure pathways to reinforcement at maximum 10-foot intervals.
  2. Arrange pathways to cross building expansion joints at right angles with expansion fittings.
  3. Arrange pathways to keep a minimum of 1 inch of concrete cover in all directions.
  4. Do not embed threadless fittings in concrete unless specifically approved by Architect for each specific location.
- H. Stub-ups to Above Recessed Ceilings:
1. Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.
- I. Coat field-cut threads on PVC-coated pathway with a corrosion-preventing conductive compound prior to assembly.
- J. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install insulated bushings on conduits terminated with locknuts.

- K. Install pathways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.
- L. Install pathway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound.
- M. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all pathways at the following points:
  - 1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
  - 2. Where an underground service pathway enters a building or structure.
  - 3. Where otherwise required by NFPA 70.
- N. Mount boxes at heights indicated on Drawings in accordance with ADA requirements. Install boxes with height measured to center of box unless otherwise indicated.

### 3.2 FIRESTOPPING

- A. Install firestopping at penetrations of fire-rated floor and wall assemblies. Comply with requirements in Division 07 Section "Penetration Firestopping."

### 3.3 PROTECTION

- A. Protect coatings, finishes, and cabinets from damage or deterioration.

**END OF SECTION 27 0528**

## SECTION 27 0553 - IDENTIFICATION FOR COMMUNICATIONS SYSTEMS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
1. Color and legend requirements for labels.
  2. Labels.
  3. Fasteners for labels and signs.

#### 1.2 ACTION SUBMITTALS

- A. Category Cable Labels

#### 1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Cabling Installer shall have personnel certified by BICSI on staff.
1. Layout Responsibility: Preparation of Shop Drawings, cabling administration Drawings, and field-testing program development by a BICSI TECH.
  2. Installation Supervision: Installation shall be under the direct supervision of a BICSI TECH, who shall be present at all times when work of this Section is performed at Project site.
  3. Testing Supervisor: Currently certified by BICSI as a TECH to supervise on-site testing.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. Comply with NFPA 70 and TIA 606-D.
- B. Comply with ANSI Z535.4 for safety signs and labels.
- C. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.
1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

#### 2.2 COLOR AND LEGEND REQUIREMENTS

- A. Category Cabling Identification Labels:

1. Black letters on white field.

## 2.3 LABELS

- A. Self-Adhesive Wraparound Labels: computer printed, 3-mil-thick, vinyl flexible labels with acrylic pressure-sensitive adhesive.
  1. Material is RoHS compliant (European Union directive 2011/65/EU). Material is a top coated polymer film with a pressure sensitive adhesive. This material is used in a self-laminating format for wire/cable marking. This material is halogen free.
  2. Retain one of two "Marker for Labels" subparagraphs below.
  3. Marker for Labels: Permanent, waterproof black ink marker recommended by tag manufacturer.
  4. Marker for Labels: Machine-printed, permanent, waterproof black ink recommended by printer manufacturer.
  5. Handwritten labels are not approved.
- B. Self-Adhesive Labels: Vinyl, thermal, transfer-printed, 3-mil-thick, multicolor, weather- and UV-resistant, pressure-sensitive adhesive labels, configured for intended use and location.
  1. Minimum Nominal Size:
    - a. 1-1/2 by 6 inches for raceway and conductors
    - b. 3-1/2 by 5 inches for equipment.
    - c. As required by authorities having jurisdiction.

## 2.4 FASTENERS FOR LABELS AND SIGNS

- A. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Verify and coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and operation and maintenance manual. Use consistent designations throughout Project.
- B. Verify identity of each item before installing identification products.
- C. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.
- D. Apply identification devices to surfaces that require finish after completing finish work.
- E. Install signs with approved legend to facilitate proper identification, operation, and maintenance of communications systems and connected items.

- F. Elevated Components: Increase sizes of labels, signs, and letters to those appropriate for viewing from the floor.
- G. Self-Adhesive Wraparound Labels:
  - 1. Secure tight to surface at a location with high visibility and accessibility.
  - 2. Provide label within 12 inches from each cable end.
- H. Self-Adhesive Labels:
  - 1. On each item, install unique designation label that is consistent with wiring diagrams, schedules, and operation and maintenance manual.
  - 2. Unless otherwise indicated, provide a single line of text with 1/2-inch-high letters on 1-1/2-inch-high label; where two lines of text are required, use labels 2 inches high.

### 3.2 IDENTIFICATION SCHEDULE

- A. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment. Install access doors or panels to provide view of identifying devices.
- B. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations with high visibility. Identify by system and circuit designation.
- C. Accessible Fittings for Raceways and Cables within Buildings: Identify covers of each junction and pull box with self-adhesive labels containing wiring system legend.
  - 1. System legends shall be as follows:
    - a. Telecommunications.
- D. Faceplates: Label individual faceplates with self-adhesive labels. Place label at top of faceplate. Each faceplate shall be labeled with its individual, sequential designation, numbered clockwise when entering room from primary egress, composed of the following, in the order listed:
  - 1. Refer to detail drawings
- E. Equipment Room Labeling:
  - 1. Racks, Frames, and Enclosures: Identify front and rear of each with self-adhesive labels containing equipment designation.
  - 2. Patch Panels: Label individual rows and outlets, starting at to left and working down, with self-adhesive labels.
- F. Backbone Cables: Label each cable with a self-adhesive wraparound label indicating the location of the far or other end of the backbone cable. Patch panel or punch down block where cable is terminated should be labeled identically.
  - 1. Fiber optic cables shall be labeled on each end within 12 inches of where fiber cable enters enclosure.

- G. Horizontal Cables: Label each cable with a self-adhesive wraparound label indicating the following, in the order listed:
  - 1. Refer to detail drawings.
- H. Instructional Signs: Self-adhesive labels.
- I. Warning Labels for Indoor Cabinets, Boxes, and Enclosures: Self-adhesive labels.
  - 1. Apply to exterior of door, cover, or other access.
- J. Equipment Identification Labels:
  - 1. Indoor Equipment: Self-adhesive label.
  - 2. Outdoor Equipment: Laminated-acrylic or melamine-plastic sign.
  - 3. Equipment to Be Labeled:
    - a. Communications cabinets.
    - b. Uninterruptible power supplies.
    - c. Computer room air conditioners.
    - d. Fire-alarm and suppression equipment.
    - e. Egress points.
    - f. Power distribution components.

**END OF SECTION 27 0553**

## SECTION 27 1323 - COMMUNICATIONS OPTICAL FIBER BACKBONE CABLING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Fiber optic cabling shall be installed as shown on drawings. This specification includes multiple types of fiber optic cable and components, but contractor is responsible for referring to drawings for specific type included in project. Refer to project drawings for fiber riser diagram(s) that will indicate type of fiber and associated components.
- B. Section Includes:
  - 1. 62.5/125-Micrometer, Multimode, Optical Fiber Cable (OM1)
  - 2. 50/125 Micrometer, Multimode, Optical Fiber Cable (OM2)
  - 3. 850 Nanometer Laser-Optimized 50/125 Micrometer Multimode Optical Fiber Cable (OM3)
  - 4. 850 Nanometer Laser-Optimized 50/125 Micrometer Multimode Optical Fiber Cable (OM4)
  - 5. 9/125 Micrometer Single-Mode, Indoor-Outdoor Optical Fiber Cable (OS1)
  - 6. 9/125 Micrometer Single-Mode, Indoor-Outdoor Optical Fiber Cable (OS2)
  - 7. Fiber Optic Enclosures
  - 8. Fiber Optic Terminations
  - 9. Fiber Optic Adapter Panels
  - 10. Fiber Optic Patch Cables
  - 11. Cabling Identification Products

#### 1.2 OPTICAL FIBER BACKBONE CABLING DESCRIPTION

- A. Optical fiber backbone cabling system shall provide interconnections between communications equipment rooms, main terminal space, and entrance facilities in the telecommunications cabling system structure. Cabling system consists of backbone cables, intermediate and main cross-connects, mechanical terminations, and patch cords or jumpers used for backbone-to-backbone cross-connection.
- B. Backbone cabling cross-connects may be located in communications equipment rooms or at entrance facilities. Bridged taps and splitters shall not be used as part of backbone cabling.

#### 1.3 ACTION SUBMITTALS

- A. Fiber Optic Cable
- B. Fiber Optic Enclosures
- C. Fiber Optic Terminations
- D. Fiber Optic Fiber Adapter Panels
- E. Fiber Optic Patch Cables

1.4 INFORMATIONAL SUBMITTALS

- A. Fiber Optic Cable Manufacturer Installer Certificate
  - 1. A minimum of two installers shall be currently certified by the manufacturer of the products being installed (e.g. Corning, General Cable, Panduit, Belden, Commscope, etc.).
- B. BICSI TECH Certification
  - 1. A minimum of one installer is required to hold a current BICSI TECH certification.

1.5 CLOSEOUT SUBMITTALS

- A. As-built Drawings.
  - 1. As-built drawings shall be in PDF format.
  - 2. No hand-written drawings shall be accepted.
- B. Certification results for all strands of fiber optic cable
  - 1. Results shall be submitted in PDF & Certification Tester Format.
- C. Cabling Manufacturer Warranty Certificate.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Cabling Installer is preferred to have personnel certified by BICSI on staff.
  - 1. Layout Responsibility: Preparation of Shop Drawings, cabling administration Drawings, and field-testing program development by a BICSI TECHNICIAN.
  - 2. Installation Supervision: Installation shall be under the direct supervision of a BICSI TECHNICIAN, who shall be present at all times when Work of this Section is performed at Project site.
  - 3. Testing Supervisor: Currently certified by BICSI as a TECHNICIAN to supervise on-site testing.
- B. Testing Agency Qualifications: Testing agency is preferred to have personnel certified by BICSI on staff.
  - 1. Testing Agency's Field Supervisor: Currently certified by BICSI as a TECHNICIAN.

1.7 COORDINATION

- A. Coordinate layout and installation of telecommunications pathways and cabling with Owner's telecommunications and LAN equipment and service suppliers.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Backbone cabling system shall comply with transmission standards in TIA-568.3-E, when tested according to test procedures of this standard.
- B. Telecommunications Pathways and Spaces: Comply with TIA-569-E.
- C. Grounding: Comply with TIA-607-E.

### 2.2 62.5/125-MICROMETER, MULTIMODE, OPTICAL FIBER CABLE (OM1)

- A. Description: Multimode, 62.5/125-micrometer.
- B. Standards:
  - 1. Comply with TIA-492CAAA for detailed specifications.
  - 2. Comply with TIA-568-3.E for performance specifications.
  - 3. Comply with ICEA S-83-596 for mechanical properties.
- C. Maximum Attenuation: 3.50 dB/km at 850 nm; 1.0 dB/km at 1300 nm.
- D. Minimum Overfilled Modal Bandwidth-length Product: 200 MHz-km at 850 nm; 500 MHz-km at 1300 nm.
- E. Jacket:
  - 1. Jacket Color: Orange.
  - 2. Cable cordage jacket, fiber, unit, and group color shall be according to TIA-598-D.
  - 3. Imprinted with fiber count, fiber type, and aggregate length at regular intervals not to exceed 40 inches.
- F. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 444, UL 1651, and NFPA 70 for the following types:
  - 1. Plenum Rated, Nonconductive: Type OFNP, complying with NFPA 262.
  - 2. Plenum Rated, Nonconductive: Type OFNP in listed plenum communications raceway.
  - 3. Plenum Rated, Nonconductive: Type OFNP, or Type OFNR in metallic conduit.
  - 4. Plenum Rated, Nonconductive: Type OFNP, complying with NFPA 262; Type OFNP in listed plenum communications raceway; or Type OFNP, or Type OFNR in metallic conduit.
  - 5. Riser Rated, Nonconductive: Type OFNR or Type OFNP, complying with UL 1666.
  - 6. Riser Rated, Nonconductive: Type OFNP or Type OFNR in listed riser or plenum communications raceway.
  - 7. Riser Rated, Nonconductive: Type OFNP or Type OFNR in metallic conduit installed per NFPA 70, Article 300.22, "Wiring in Ducts, Plenums, and Other Air-Handling Spaces."
  - 8. Plenum Rated, Conductive: Type OFCP complying with NFPA 262.
  - 9. Plenum Rated, Conductive: Type OFCP or Type OFNP in listed plenum communications raceway.

10. Plenum Rated, Conductive: Type OFCP, Type OFNP, Type OFCR, or Type OFNR in metallic conduit installed per NFPA 70, Article 300.22, "Wiring in Ducts, Plenums, and Other Air-Handling Spaces."
11. Riser Rated, Conductive: Type OFCR; or Type OFCP; complying with UL 1666 and ICEA S-103-701.
12. Riser Rated, Conductive: Type OFCP, Type OFNP, or Type OFCR or Type OFNP in listed riser or plenum communications raceway.
13. Riser Rated, Conductive: Type OFCP, Type OFNP, Type OFCR, or Type OFNR in metallic conduit.

2.3 50/125 MICROMETER, MULTIMODE, OPTICAL FIBER CABLE (OM2)

- A. Description: Multimode, 50/125-micrometer.
- B. Standards:
  1. Comply with TIA-492CAAA for detailed specifications.
  2. Comply with TIA-568-3.E for performance specifications.
  3. Comply with ICEA S-83-596 for mechanical properties.
- C. Maximum Attenuation: 3.00 dB/km at 850 nm; 1.0 dB/km at 1300 nm.
- D. Minimum Overfilled Modal Bandwidth-length Product: 700 MHz-km at 850 nm; 500 MHz-km at 1300 nm.
- E. Jacket:
  1. Jacket Color: Orange.
  2. Cable cordage jacket, fiber, unit, and group color shall be according to TIA-598-D.
  3. Imprinted with fiber count, fiber type, and aggregate length at regular intervals not to exceed 40 inches.
- F. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 444, UL 1651, and NFPA 70 for the following types:
  1. Plenum Rated, Nonconductive: Type OFNP, complying with NFPA 262.
  2. Plenum Rated, Nonconductive: Type OFNP in listed plenum communications raceway.
  3. Plenum Rated, Nonconductive: Type OFNP, or Type OFNR in metallic conduit.
  4. Plenum Rated, Nonconductive: Type OFNP, complying with NFPA 262; Type OFNP in listed plenum communications raceway; or Type OFNP, or Type OFNR in metallic conduit.
  5. Riser Rated, Nonconductive: Type OFNR or Type OFNP, complying with UL 1666.
  6. Riser Rated, Nonconductive: Type OFNP or Type OFNR in listed riser or plenum communications raceway.
  7. Riser Rated, Nonconductive: Type OFN, Type OFNG, Type OFNP, or Type OFNR in metallic conduit installed per NFPA 70, Article 300.22, "Wiring in Ducts, Plenums, and Other Air-Handling Spaces."
  8. Plenum Rated, Conductive: Type OFCP or Type OFNP, complying with NFPA 262.
  9. Plenum Rated, Conductive: Type OFCP or Type OFNP in listed plenum communications raceway.

10. Plenum Rated, Conductive: Type OFC, Type OFN, Type OFCG, Type OFNG, Type OFCP, Type OFNP, Type OFCR, or Type OFNR in metallic conduit installed per NFPA 70, Article 300.22, "Wiring in Ducts, Plenums, and Other Air-Handling Spaces."
  11. Riser Rated, Conductive: Type OFCR; or Type OFCP; complying with UL 1666 and ICEA S-103-701.
  12. Riser Rated, Conductive: Type OFCP, Type OFNP, or Type OFCR or Type OFNP in listed riser or plenum communications raceway.
  13. Riser Rated, Conductive: Type OFCP, Type OFNP, Type OFCR, or Type OFNR in metallic conduit.
- 2.4 850 NANOMETER LASER-OPTIMIZED, 50/125 MICROMETER, MULTIMODE OPTICAL FIBER CABLE (OM3)
- A. Description: Multimode, 50/125-micrometer.
  - B. Standards:
    1. Comply with TIA-492CAAA for detailed specifications.
    2. Comply with TIA-568-3.E for performance specifications.
    3. Comply with ICEA S-83-596 for mechanical properties.
  - C. Maximum Attenuation: 3.00 dB/km at 850 nm; 1.0 dB/km at 1300 nm.
  - D. Minimum Overfilled Modal Bandwidth-length Product: 1500 MHz-km at 850 nm; 500 MHz-km at 1300 nm.
  - E. Minimum Effective Modal Bandwidth-length Product: 2000 MHz-km at 850 nm.
  - F. Jacket:
    1. Jacket Color: Aqua.
    2. Cable cordage jacket, fiber, unit, and group color shall be according to TIA-598-D.
    3. Imprinted with fiber count, fiber type, and aggregate length at regular intervals not to exceed 40 inches.
  - G. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 444, UL 1651, and NFPA 70 for the following types:
    1. Plenum Rated, Nonconductive: Type OFNP, complying with NFPA 262.
    2. Plenum Rated, Nonconductive: Type OFNP in listed plenum communications raceway.
    3. Plenum Rated, Nonconductive: Type OFNP, or Type OFNR in metallic conduit.
    4. Plenum Rated, Nonconductive: Type OFNP, complying with NFPA 262; Type OFNP in listed plenum communications raceway; or Type OFNP, or Type OFNR in metallic conduit.
    5. Riser Rated, Nonconductive: Type OFNR or Type OFNP, complying with UL 1666.
    6. Riser Rated, Nonconductive: Type OFNP or Type OFNR in listed riser or plenum communications raceway.
    7. Riser Rated, Nonconductive: Type OFNP, or Type OFNR in metallic conduit installed per NFPA 70, Article 300.22, "Wiring in Ducts, Plenums, and Other Air-Handling Spaces."
    8. Plenum Rated, Conductive: Type OFCP or Type OFNP, complying with NFPA 262.
    9. Plenum Rated, Conductive: Type OFCP or Type OFNP in listed plenum communications raceway.

10. Plenum Rated, Conductive: Type OFNG, Type OFCP, Type OFNP, Type OFCR, or Type OFNR in metallic conduit installed per NFPA 70, Article 300.22, "Wiring in Ducts, Plenums, and Other Air-Handling Spaces."
  11. Riser Rated, Conductive: Type OFCR or Type OFCP; complying with UL 1666 and ICEA S-103-701.
  12. Riser Rated, Conductive: Type OFCP, Type OFNP, or Type OFCR or Type OFNP in listed riser or plenum communications raceway.
  13. Riser Rated, Conductive: Type OFCP, Type OFNP, Type OFCR, or Type OFNR in metallic conduit.
- 2.5 850 NANOMETER LASER-OPTIMIZED, 50/125 MICROMETER, MULTIMODE OPTICAL FIBER CABLE (OM4)
- A. Description: Multimode, 50/125-micrometer.
  - B. Standards:
    1. Comply with ICEA S-83-596 for mechanical properties.
    2. Comply with TIA-568-3.E for performance specifications.
    3. Comply with TIA-492AAAD for detailed specifications.
  - C. Maximum Attenuation: 3.00 dB/km at 850 nm; 1.0 dB/km at 1300 nm.
  - D. Minimum Overfilled Modal Bandwidth-length Product: 3500 MHz-km at 850 nm; 500 MHz-km at 1300 nm.
  - E. Minimum Effective Modal Bandwidth-length Product: 4700 MHz-km at 850 nm.
  - F. Jacket:
    1. Jacket Color: Aqua.
    2. Cable cordage jacket, fiber, unit, and group color shall be according to TIA-598-D.
    3. Imprinted with fiber count, fiber type, and aggregate length at regular intervals not to exceed 40 inches.
  - G. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 444, UL 1651, and NFPA 70 for the following types:
    1. Plenum Rated, Nonconductive: Type OFNP, complying with NFPA 262.
    2. Plenum Rated, Nonconductive: Type OFNP in listed plenum communications raceway.
    3. Plenum Rated, Nonconductive: Type OFNP, or Type OFNR in metallic conduit.
    4. Plenum Rated, Nonconductive: Type OFNP, complying with NFPA 262; Type OFNP in listed plenum communications raceway; or Type OFN, Type OFNG, Type OFNP, or Type OFNR in metallic conduit.
    5. Riser Rated, Nonconductive: Type OFNR or Type OFNP, complying with UL 1666.
    6. Riser Rated, Nonconductive: Type OFNP or Type OFNR in listed riser or plenum communications raceway.
    7. Riser Rated, Nonconductive: Type OFNP, or Type OFNR in metallic conduit installed per NFPA 70, Article 300.22, "Wiring in Ducts, Plenums, and Other Air-Handling Spaces."
    8. Plenum Rated, Conductive: Type OFCP, complying with NFPA 262.

9. Plenum Rated, Conductive: Type OFCP or Type OFNP in listed plenum communications raceway.
10. Plenum Rated, Conductive: Type OFCP, Type OFNP, Type OFCR, or Type OFNR in metallic conduit installed per NFPA 70, Article 300.22, "Wiring in Ducts, Plenums, and Other Air-Handling Spaces."
11. Riser Rated, Conductive: Type OFCR or Type OFCP; complying with UL 1666 and ICEA S-103-701.
12. Riser Rated, Conductive: Type OFCP, Type OFNP, or Type OFCR or Type OFNP in listed riser or plenum communications raceway.
13. Riser Rated, Conductive: Type OFCP, Type OFNP, Type OFCR, or Type OFNR in metallic conduit.

2.6 9/125 MICROMETER SINGLE-MODE, INDOOR-OUTDOOR OPTICAL FIBER CABLE (OS1)

- A. Description: Single mode, 9/125-micrometer.
- B. Standards:
  1. Comply with TIA-492CAAA for detailed specifications.
  2. Comply with TIA-568-3.E for performance specifications.
  3. Comply with ICEA S-104-696 for mechanical properties.
- C. Maximum Attenuation: 0.5 dB/km at 1310 nm; 0.5 dB/km at 1550 nm.
- D. Jacket:
  1. Jacket Color: Yellow.
  2. Cable cordage jacket, fiber, unit, and group color shall be according to TIA-598-D.
  3. Imprinted with fiber count, fiber type, and aggregate length at regular intervals not to exceed 40 inches.
- E. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 444, UL 1651, and NFPA 70 for the following types:
  1. Plenum Rated, Nonconductive: Type OFNP, complying with NFPA 262.
  2. Plenum Rated, Nonconductive: Type OFNP in listed plenum communications raceway.
  3. Plenum Rated, Nonconductive: Type OFNP, or Type OFNR in metallic conduit.
  4. Plenum Rated, Nonconductive: Type OFNP, complying with NFPA 262; Type OFNP in listed plenum communications raceway; or Type OFN, Type OFNG, Type OFNP, or Type OFNR in metallic conduit.
  5. Riser Rated, Nonconductive: Type OFNR or Type OFNP, complying with UL 1666.
  6. Riser Rated, Nonconductive: Type OFNP or Type OFNR in listed riser or plenum communications raceway.
  7. Riser Rated, Nonconductive: Type OFNP, or Type OFNR in metallic conduit installed per NFPA 70, Article 300.22, "Wiring in Ducts, Plenums, and Other Air-Handling Spaces."
  8. Plenum Rated, Armored (Conductive): Type OFCP, complying with NFPA 262.
  9. Plenum Rated, Armored (Conductive): Type OFCP or Type OFNP in listed plenum communications raceway.

10. Plenum Rated, Armored (Conductive): Type OFCP, Type OFNP, Type OFCR, or Type OFNR in metallic conduit installed per NFPA 70, Article 300.22, "Wiring in Ducts, Plenums, and Other Air-Handling Spaces."
11. Riser Rated, Armored (Conductive): Type OFCR or Type OFCP; complying with UL 1666 and ICEA S-103-701.
12. Riser Rated, Armored (Conductive): Type OFCP, Type OFNP, or Type OFCR or Type OFNP in listed riser or plenum communications raceway.
13. Riser Rated, Armored (Conductive): Type OFCP, Type OFNP, Type OFCR, or Type OFNR in metallic conduit.

2.7 9/125 MICROMETER, SINGLE-MODE, INDOOR-OUTDOOR OPTICAL FIBER CABLE (OS2)

- A. Description: Single mode, 9/125-micrometer.
- B. Standards:
  1. Comply with TIA-492CAAB for detailed specifications.
  2. Comply with TIA-568-3.E for performance specifications.
  3. Comply with ICEA S-104-696 for mechanical properties.
- C. Maximum Attenuation: 0.5 dB/km at 1310 nm; 0.5 dB/km at 1550 nm.
- D. Jacket:
  1. Jacket Color: Yellow.
  2. Cable cordage jacket, fiber, unit, and group color shall be according to TIA-598-D.
  3. Imprinted with fiber count, fiber type, and aggregate length at regular intervals not to exceed 40 inches.
- E. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 444, UL 1651, and NFPA 70 for the following types:
  1. Plenum Rated, Nonconductive: Type OFNP, complying with NFPA 262.
  2. Plenum Rated, Nonconductive: Type OFNP in listed plenum communications raceway.
  3. Plenum Rated, Nonconductive: Type OFNP, or Type OFNR in metallic conduit.
  4. Plenum Rated, Nonconductive: Type OFNP, complying with NFPA 262; Type OFNP in listed plenum communications raceway; or Type OFN, Type OFNG, Type OFNP, or Type OFNR in metallic conduit.
  5. Riser Rated, Nonconductive: Type OFNR or Type OFNP, complying with UL 1666.
  6. Riser Rated, Nonconductive: Type OFNP or Type OFNR in listed riser or plenum communications raceway.
  7. Riser Rated, Nonconductive: Type OFNP, or Type OFNR in metallic conduit installed per NFPA 70, Article 300.22, "Wiring in Ducts, Plenums, and Other Air-Handling Spaces."
  8. Plenum Rated, Armored (Conductive): Type OFCP, complying with NFPA 262.
  9. Plenum Rated, Armored (Conductive): Type OFCP or Type OFNP in listed plenum communications raceway.
  10. Plenum Rated, Armored (Conductive): Type OFCP, Type OFNP, Type OFCR, or Type OFNR in metallic conduit installed per NFPA 70, Article 300.22, "Wiring in Ducts, Plenums, and Other Air-Handling Spaces."

11. Riser Rated, Armored (Conductive): Type OFCR or Type OFCP; complying with UL 1666 and ICEA S-103-701.
12. Riser Rated, Armored (Conductive): Type OFCP, Type OFNP, or Type OFCR or Type OFNP in listed riser or plenum communications raceway.
13. Riser Rated, Armored (Conductive): Type OFCP, Type OFNP, Type OFCR, or Type OFNR in metallic conduit.

## 2.8 FIBER OPTIC ENCLOSURES

- A. Description: Rack or Wall mount fiber enclosure to house fiber terminations and/or splices
- B. Standards:
  1. Comply with Optical Fiber Connector Intermateability Standard specifications of the TIA-604 series.
  2. Comply with TIA-568-3.E.
  3. Rack or wall mount
  4. Black
  5. Sliding tray
  6. Accepts a minimum of 3 Fiber Adapter Panels (FAP)
  7. Front & rear access
  - 8.
  - 9.
- C. Manufacturer
  1. Refer to drawing details for manufacturer and part number.

## 2.9 FIBER OPTIC TERMINATIONS

- A. LC form factor, Fusion-Splice Connectors shall be FOCIS-10 compatible (for LC), and include a pre-polished fiber which eliminates the need for field polishing and adhesives.
- B. The connectors shall be composed of a ferrule assembly with integral fiber, a front housing, and a rear assembly, plus additional components as necessary by connector type (including angled physical contact polish).
- C. The connectors shall exceed TIA/EIA-568-3.E performance requirements for IL and RL, and have a functional temperature range from -40°C to 75°C.
- D. These splice-on connectors shall be compatible with Sumitomo brand splice units.
- E. Connector Type: Simplex LC
- F. Polish: UPC
- G. Insertion Loss: 0.15dB average
- H. Return Loss: >55dB

- I. Manufacturer
  - 1. Refer to drawing details for manufacturer and part number(s).

## 2.10 FIBER OPTIC ADAPTER PANELS

- A. Fiber adapter panels contain TIA/EIA-604 FOCIS compliant or compatible simplex or duplex fiber optic adapters and meet or exceed TIA/EIA-568-3.E requirements.
- B. Fiber adapter panels include horizontal/vertical LC fiber optic adapters.
- C. Fiber optic adapters include zirconia ceramic split sleeves to fit specific network requirements.
- D. LC adapter housing colors follow the TIA/EIA-568-3.E suggested color identification scheme.
- E. Multimedia modular panels allow customization of installation for applications requiring integration of fiber optic and copper cables.
- F. Blank fiber adapter panels reserve fiber adapter panel space for future use.
- G. All fiber adapter panels snap quickly into the front of fiber optic patch panels and enclosures for easy network deployment or moves, adds, and changes.
- H. Split Sleeve: Zirconia Ceramic
  - I. Manufacturer
    - 1. Refer to drawing details for manufacturer and part number.

## 2.11 FIBER OPTIC PATCH CABLES

- A. Fiber optic patch cords provide interconnect and cross-connect of applications over installations in entrance facilities, telecommunications rooms, data centers and at the desk.
- B. Patch cords support network applications in main, horizontal and equipment distribution areas and are available in riser (OFNR), and low smoke zero halogen (LSZH) rated jacket materials to comply with local cabling ordinances.
- C. Fiber optic patch cords and pigtails are available in OM4, OM3, OM2, OM1, or OS1/OS2 fiber types to meet the demands of Gigabit Ethernet, 10 Gigabit Ethernet and high-speed Fiber Channel.
- D. LC Duplex (2-fiber)
- E. OFNR
- F. Field verify length.
- G. Quantity

1. Provide four duplex fiber patch cables for each installed fiber backbone cable.

H. Manufacturer

1. Refer to drawing details for manufacturer and part number.

2.12 CABLING IDENTIFICATION PRODUCTS

- A. Comply with TIA-606-D and UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers

2.13 SOURCE QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to evaluate cables.
- B. Factory test multimode optical fiber cables according to TIA-526-14-D and TIA-568-3.E.
- C. Factory test pre-terminated optical fiber cable assemblies according to TIA-526-14-D and TIA-568-3.E.
- D. Cable will be considered defective if it does not pass tests and inspections. Prepare test and inspection reports.

PART 3 - EXECUTION

3.1 WIRING METHODS

- A. Wiring Method: Utilize cable tray, conduit or J-hook support between Telecommunication Rooms. Utilize cable tray within Telecommunication Room.
  1. Install plenum cable in environmental air spaces, including plenum ceilings.
- B. Wiring Method: Conceal conductors and cables in accessible ceilings, walls, and floors where possible.
- C. Wiring within Enclosures: Bundle, lace, and train cables within enclosures. Connect to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools.

3.2 INSTALLATION OF OPTICAL FIBER BACKBONE CABLES

- A. Comply with NECA 1, NECA 301, and NECA/BICSI 568.
- B. General Requirements for Optical Fiber Cabling Installation:
  1. Comply with TIA-568-1.E and TIA-568-3.E.
  2. Comply with BICSI ITSIMM, Ch. 6, "Cable Termination Practices."

3. Terminate all cables; no cable shall contain unterminated elements. Make terminations only at indicated outlets, terminals, cross-connects, and patch panels.
4. Cables may not be spliced. Secure and support cables at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
5. Install lacing bars to restrain cables, to prevent straining connections, and to prevent bending cables to smaller radii than minimums recommended by manufacturer.
6. Bundle, lace, and train cable to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI ITSIMM, "Cabling Termination Practices" Chapter. Use lacing bars and distribution spools.
7. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.
8. Cold-Weather Installation: Bring cable to room temperature before de-reeling. Heat lamps shall not be used for heating.
9. In the communications equipment room, provide a 10-foot-long service loop on each end of cable.
10. Pulling Cable: Comply with BICSI ITSIMM, Ch. 4, "Pulling Cable." Monitor cable pull tensions.
11. Cable may be terminated on connecting hardware that is rack or cabinet mounted.

C. Open-Cable Installation:

1. Install cabling with horizontal and vertical cable guides in telecommunications spaces with terminating hardware and interconnection equipment.
2. Cable shall not be run through structural members or in contact with pipes, ducts, or other potentially damaging items.

D. Group connecting hardware for cables into separate logical fields.

### 3.3 FIRESTOPPING

- A. Comply with requirements in Section 07 8413 "Penetration Firestopping."
- B. Comply with TIA-569-E, Annex A, "Firestopping."
- C. Comply with BICSI ITSIMM, "Firestopping" Chapter.

### 3.4 GROUNDING

- A. Install grounding according to BICSI ITSIMM, "Grounding (Earthing), Bonding, and Electrical Protection" Chapter.
- B. Comply with TIA-607-E and NECA/BICSI-607.
- C. Locate grounding bus bar to minimize the length of bonding conductors. Fasten to wall allowing at least 2-inch clearance behind the grounding bus bar. Connect grounding bus bar with a minimum No. 4 AWG grounding electrode conductor from grounding bus bar to suitable electrical building ground.
- D. Bond metallic equipment to the grounding bus bar, using not smaller than No. 6 AWG equipment grounding conductor.

### 3.5 IDENTIFICATION

- A. Identify system components, wiring, and cabling complying with TIA-606-D. Comply with requirements for identification specified in Section 27 0553 "Identification for Communications Systems."
  - 1. Color-code cross-connect fields and apply colors to voice and data service backboards, connections, covers, and labels.
- B. Cable Schedule: Install in a prominent location in each equipment room and wiring closet. List incoming and outgoing cables and their designations, origins, and destinations. Protect with rigid frame and clear plastic cover. Furnish an electronic copy of final comprehensive schedules for Project.
- C. Cable and Wire Identification:
  - 1. Label each cable within 4 inches (100 mm) of each termination and tap, where it is accessible in a cabinet or junction or outlet box, and elsewhere as indicated.
  - 2. Each wire connected to building-mounted devices is not required to be numbered at device if color of wire is consistent with associated wire connected and numbered within panel or cabinet.
  - 3. Exposed Cables and Cables in Cable Trays and Wire Troughs: Label each cable at intervals not exceeding 15 feet (4.5 m).
  - 4. Label each unit and field within distribution racks and frames.
  - 5. Identification within Connector Fields in Equipment Rooms and Wiring Closets: Label each connector and each discrete unit of cable-terminating and connecting hardware. Where similar jacks and plugs are used for both voice and data communication cabling, use a different color for jacks and plugs of each service.
- D. Labels shall be preprinted or computer-printed type with printing area and font color that contrasts with cable jacket color but still complies with requirements in TIA 606-D, for the following:
  - 1. Flexible vinyl or polyester that flexes as cables are bent.

### 3.6 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Tests and Inspections:
  - 1. Visually inspect optical fiber jacket materials for NRTL certification markings. Inspect cabling terminations in communications equipment rooms for compliance with color-coding for pin assignments and inspect cabling connections for compliance with TIA-568-3.E.
  - 2. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.
  - 3. Optical Fiber Cable Tests:
    - a. Test instruments shall meet or exceed applicable requirements in TIA-568-3.E. Use only test cords and adapters that are qualified by test equipment manufacturer for channel or link test configuration.

- C. Data for each measurement shall be documented. Data for submittals shall be printed in a summary report that is formatted similar to Table 10.1 in BICSI TDMM, or transferred from the instrument to the computer, saved as text files, and printed and submitted.
- D. Remove and replace cabling where test results indicate that it does not comply with specified requirements.
- E. End-to-end cabling will be considered defective if it does not pass tests and inspections.
- F. Prepare test and inspection reports.

**END OF SECTION 27 1323**

## SECTION 27 1513 – COMMUNICATIONS COPPER HORIZONTAL CABLING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Work covered by this Section shall consist of furnishing labor, equipment, supplies, materials, and testing unless otherwise specified, and in performing the following operations recognized as necessary for the installation, termination, and labeling of copper horizontal cabling infrastructure as described on the Drawings and/or required by these specifications.
- B. Section Includes:
  - 1. CAT6 Cable.
  - 2. CAT6 Patch Panels.
  - 3. CAT6 Jack Modules.
  - 4. CAT6 Modular Plugs.
  - 5. Faceplates.
  - 6. Surface Mount Boxes.
  - 7. CAT6 Patch Cables.
  - 8. Certification Testing.
  - 9. As-Built Drawings.
  - 10. Grounding provisions for twisted pair cable.
  - 11. Cable Manufacturer Warranty

#### 1.2 COPPER HORIZONTAL CABLING DESCRIPTION

- A. Horizontal cabling system shall provide interconnections between Distributor A, Distributor B, or Distributor C, and the equipment outlet, otherwise known as "Cabling Subsystem 1," in the telecommunications cabling system structure. Cabling system consists of horizontal cables, intermediate and main cross-connects, mechanical terminations, and patch cords or jumpers used for horizontal-to-horizontal cross-connection.
  - 1. TIA-568.2-E requires that a minimum of two equipment outlets be installed for each work area.
  - 2. Horizontal cabling shall contain no more than one transition point or consolidation point between the horizontal cross-connect and the telecommunications equipment outlet.
  - 3. Bridged taps and splices shall not be installed in the horizontal cabling.
- B. A work area is approximately 100 sq. ft. and includes the components that extend from the equipment outlets to the station equipment.
- C. The maximum allowable horizontal cable length is 295 feet. This maximum allowable length does not include an allowance for the length of 16 feet to the workstation equipment or in the horizontal cross-connect.

#### 1.3 ACTION SUBMITTALS

- A. CAT6 Cable

- B. CAT6 Patch Panels
- C. CAT6 Jack Modules
- D. CAT6 Modular Plugs
- E. Faceplates
- F. Surface Mount Boxes
- G. CAT6 Patch Cables

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Cabling Manufacturer Certified Installer Certificate
  - 1. A minimum of two installers shall be currently certified by the manufacturer of the products being installed (e.g., Panduit, Belden, Hubbell, Commscope).
- B. BICSI TECH Certification
  - 1. A minimum of one installer is required to hold a current BICSI TECH certification.

#### 1.5 CLOSEOUT SUBMITTALS

- A. As-built Drawings.
- B. Certification results for all installed CAT6 cables.
  - 1. Results shall be submitted in PDF & Certification Tester Format
- C. Cabling Manufacturer Warranty Certificate

#### 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Cabling Installer shall have personnel certified by BICSI on staff.
  - 1. Layout Responsibility: Preparation of Shop Drawings, cabling administration Drawings, and field-testing program development by a BICSI TECH.
  - 2. Installation Supervision: Installation shall be under the direct supervision of a BICSI TECH, who shall be present at all times when Work of this Section is performed at Project site.
  - 3. Testing Supervisor: Currently certified by BICSI as a TECH to supervise on-site testing.
- B. Testing Agency Qualifications: Testing agency is required to have personnel certified by BICSI on staff.
  - 1. Testing Agency's Field Supervisor: Currently certified by BICSI as a TECH.

1.7 COORDINATION

- A. Coordinate layout and installation of telecommunications pathways and cabling with Owner's telecommunications and LAN equipment and service suppliers.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Horizontal cabling system shall comply with transmission standards in TIA-568.1-E, when tested according to test procedures of this standard.
- B. Telecommunications Pathways and Spaces: Comply with TIA-569-E.
- C. Grounding: Comply with TIA-607-E.

2.2 GENERAL CABLE CHARACTERISTICS

- A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with the applicable standard and NFPA 70 for the following types:
  - 1. Communications Plenum Rated: Type CMP complying with UL 1685.
  - 2. Communications, Plenum Rated: Type CM, Type CMG, Type CMP, Type CMR, or Type CMX in metallic conduit installed according to NFPA 70, Article 300.22, "Wiring in Ducts, Plenums, and Other Air-Handling Spaces."
- B. RoHS compliant.

2.3 CAT6 CABLE

- A. Description: Four-pair, balanced-twisted pair cable, certified to meet transmission characteristics of Category 6 cable at frequencies up to 350MHz.
- B. Standard Compliances:
  - 1. ANSI/TIA 568.2-E
  - 2. NEC/CEC Type CMR (UL 1666) for Non-Plenum
  - 3. NEC/CEC Type CMP (NFPA 262) for Plenum
  - 4. UL Listed CMP-LP (0.5A) for Plenum
  - 5. UL 444
  - 6. RoHS Compliant Directive 2011/65/EU
  - 7. ANSI/TIA 862 (Building Automation)
  - 8. ICEA S-116-732
  - 9. ICEA S-102-700
  - 10. ISO/IEC 11801 Ed. 2.0 (Class E)
  - 11.

- C. Applications
  - 1. IEEE 802.3: 1000 BASE-T, 100 BASE-TX, 10 BASE-T, PoE, PoE+
  - 2. ANSI/TIA 854: 1000 BASE-TX
  - 3. CDDI, Token Ring, ATM
  - 4. Digital Video
  - 5. Broadband and Baseband Analog Video

- D. Conductors: 100-ohm, 23 AWG solid copper.
- E. Shielding/Screening: Unshielded twisted pairs (UTP).
- F. Refer to drawings for cable manufacturers and part numbers.

## 2.4 CAT6 TERMINATION HARDWARE

- A. Description: This section covers patch panels, jack modules, modular plugs, faceplates and surface mount boxes.

- B. Patch Panels

- 1. Mounts to standard EIA 19" rack
- 2. All metal modular patch panels.
- 3. Stainless steel, painted black
- 4. Accept shielded and non-shielded jacks.
- 5. Write-on areas and option adhesive labels for port identification.
- 6. 24 and 48 port.
- 7. Flat and angled design.
- 8. Refer to drawings for manufacturer and part numbers.

- C. Jack Modules

- 1. CAT6/Class E, 8-position
- 2. Exceeds channel requirements of ANSI/TIA-568.2-E Category 6 and ISO 11801 Class E standards at swept frequencies 1 to 250 MHz
- 3. Meets ANSI/TIA-1096-A contacts plated with 50 microinches of gold for superior performance
- 4. Rated for 2500 cycles with IEEE 802.3af / 802.3at and 802.3bt type 3 and type 4. Supports Power over HDBaseT up to 100 watts
- 5. Operating Temp: -10°C to 65°C (14°F to 149°F)
- 6. Terminate 4-pair, 22-26 AWG
- 7. 100 Ohm
- 8. Several available color options
- 9. Refer to drawings for manufacturer and part numbers.

- D. Modular Plugs

- 1. CAT6/Class E, 8-position/8 wire
- 2. Exceeds ANSI/TIA Category 6 and ISO Class E performance requirements when properly terminated to CAT 6

3. Terminate 23-24 AWG (solid or stranded)
4. 100 Ohm
5. Supports PoE, PoE+, and proposed Type 3 and 4 PoE++ applications for up to 100 W
6. Refer to drawings for manufacturer and part numbers.

E. Faceplates - Plastic

1. Available in 1, 2, 3, 4 and 6 port single gang and two gang.
2. Optional label windows
3. Accepts variety of CAT6 jacks and AV inserts
4. Refer to drawings for manufacturer and part numbers.

F. Faceplates – Stainless Steel

1. Available in 2, 4 and 6 port single gang and two gang.
2. Optional label windows
3. Accepts variety of CAT6 jacks and AV inserts
4. Refer to drawings for manufacturer and part numbers.

G. Surface Mount Boxes

1. Low profile design
2. Variety of port densities
3. Accepts variety of CAT6 jacks and AV inserts
4. Breakouts for use with surface raceway
5. Made of ABS
6. UL 1863 rated
7. Refer to drawings for manufacturer and part numbers.

## 2.5 CAT6 PATCH CABLES

A. Description: Patch cord cable shall be offered in multiple colored UTP cable for design flexibility with a clear strain relief boot on each modular plug.

1. CAT6/Class E
2. Compatible with both T568A and T568B wiring schemes
3. Exceeds all ANSI/TIA-568.2-E and ISO 11801 Class E standards for all frequencies from 1 to 250 MHz
4. Meets ANSI/TIA-1096-A (formerly FCC Part 68); contacts plated with 50 microinches of gold for superior performance
5. UL 1863 approved
6. A variety of lengths shall be available for design flexibility.
7. PoE compliance: Rated for 2500 cycles with IEEE 802.3af / 802.3at and 802.3bt type 3 and type 4
8. Rated to 2500 mating cycles.
9. Field terminated patch cables shall not be allowed in any situation.
10. Refer to drawings for manufacturer and part numbers.

## 2.6 AS-BUILT DRAWINGS

- A. Description: Drawings submitted by contractor upon completion of project reflecting all changes made and documenting all installations.
1. As-built drawings shall be submitted to TowerPinkster as part of closeout package for any/all structured cabling projects.
  2. Each as-built shall indicate locations of all installed cables.
  3. As-built shall indicate all fiber optic pathways including any outside plant fiber.
  4. As-built drawing shall only have typed text (No hand-written as-builts).
  5. As-builts shall be submitted in PDF format.
    - a. Any other format requires approval prior to submittal.

## 2.7 GROUNDING PROVISIONS FOR TWISTED PAIR CABLING

- A. Comply with requirements in Section 27 0526 "Grounding and Bonding for Communications Systems" for grounding conductors and connectors.
- B. Comply with TIA-607-E.

## 2.8 CABLE MANUFACTURER WARRANTY

- A. A cabling manufacturer warranty shall be provided by the installation contractor for all structured cabling projects.
1. Warranty shall be 25-year standards-based performance warranty that applies to all registered links and/or channels in an installation.
  2. Warranty shall be submitted to TowerPinkster within 30 days of project completion.

## PART 3 - EXECUTION

### 3.1 INSTALLATION OF TWISTED-PAIR HORIZONTAL CABLES

- A. Comply with NECA 1 and NECA/BICSI 568.
- B. Wiring Method: Install cables in raceways and cable trays, except within consoles, cabinets, desks, and counters and except in accessible ceiling spaces, attics, and gypsum board partitions where unenclosed wiring method may be used. Conceal raceway and cables, except in unfinished spaces.
1. Install plenum cable in environmental air spaces, including plenum ceilings.
  2. Comply with requirements for raceways and boxes specified in Section 27 0528 "Pathways for Communications Systems."
  3. Comply with requirements for labelling specified in Section 27 0553 "Identification for Communication Systems."

- C. Wiring within Enclosures: Bundle, lace, and train cables within enclosures. Connect to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools. Install conductors parallel with or at right angles to sides and back of enclosure.
  
- D. General Requirements for Cabling:
  - 1. Comply with TIA-568.2-E.
  - 2. Comply with BICSI's Information Transport Systems Installation Methods Manual, Ch. 5, "Copper Structured Cabling Systems," "Cable Termination Practices" Section.
  - 3. Install 110-style IDC termination hardware unless otherwise indicated.
  - 4. Do not untwist twisted pair cables more than 1/2 inch from the point of termination to maintain cable geometry.
  - 5. Terminate all conductors; no cable shall contain unterminated elements. Make terminations only at indicated outlets, terminals, cross-connects, and patch panels.
  - 6. Cables may not be spliced. Secure and support cables at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
  - 7. Install lacing bars to restrain cables, prevent straining connections, and prevent bending cables to smaller radii than minimums recommended by manufacturer.
  - 8. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI information Transport Systems Installation Methods Manual, Ch. 5, "Copper Structured Cabling Systems," "Cable Termination Practices" Section. Use lacing bars and distribution spools.
  - 9. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.
  - 10. Cold-Weather Installation: Bring cable to room temperature before de-reeling. Heat lamps shall not be used for heating.
  - 11. In the communications equipment room, install a 10-foot-long service loop on each end of cable.
  - 12. Pulling Cable: Comply with BICSI Information Transport Systems Installation Methods Manual, Ch. 5, "Copper Structured Cabling Systems," "Pulling and Installing Cable" Section. Monitor cable pull tensions.
  - 13. Provide 5ft service loop at each location (security cameras & wireless access points shall have 15ft)
  - 14. Bundle CAT6 cables in groups of no more than 24 cables as they route on ladder rack to patch panel in all exposed areas of Telecommunication Rooms.
  
- E. Group connecting hardware for cables into separate logical fields.
  
- F. Separation from EMI Sources:
  - 1. Comply with recommendations from BICSI's "Telecommunications Distribution Methods Manual" and TIA-569-E for separating unshielded copper communication cable from potential EMI sources, including electrical power lines and equipment.

### 3.2 FIRESTOPPING

- A. Comply with requirements in Section 07 8413 "Penetration Firestopping."
- B. Comply with TIA-569-E, Annex A, "Firestopping."

- C. Comply with "Firestopping Systems" Article in BICSI's "Telecommunications Distribution Methods Manual."

### 3.3 GROUNDING

- A. Install grounding according to the "Grounding, Bonding, and Electrical Protection" chapter in BICSI's "Telecommunications Distribution Methods Manual."
- B. Comply with TIA-607-E and NECA/BICSI-607.
- C. Locate grounding bus bar to minimize the length of bonding conductors. Fasten to wall, allowing at least a 2-inch clearance behind the grounding bus bar. Connect grounding bus bar to suitable electrical building ground, using a minimum No. 4 AWG grounding electrode conductor.
- D. Bond metallic equipment to the grounding bus bar, using no smaller than a No. 6 AWG equipment grounding conductor.

### 3.4 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Tests and Inspections:
  - 1. Visually inspect jacket materials for NRTL certification markings. Inspect cabling terminations in communications equipment rooms for compliance with color-coding for pin assignments, and inspect cabling connections for compliance with TIA-568.2-E.
  - 2. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.
  - 3. Test twisted pair cabling for DC loop resistance, shorts, opens, intermittent faults, and polarity between conductors. Test operation of shorting bars in connection blocks. Test cables after termination but not cross-connection.
- C. Data for each measurement shall be documented. Data for submittals shall be printed in a summary report that is formatted similarly to Table 10.1 in BICSI's "Telecommunications Distribution Methods Manual," or shall be transferred from the instrument to the computer, saved as text files, printed, and submitted.
- D. Remove and replace cabling where test results indicate that they do not comply with specified requirements.
- E. End-to-end cabling will be considered defective if it does not pass tests and inspections.
- F. Prepare test and inspection reports.

**END OF SECTION 27 1513**

## SECTION 27 1700 - TESTING, ID. AND ADMIN OF BALANCED TWISTED PAIR INFRASTRUCTURE

### PART 1 - GENERAL

#### 1.1 WORK INCLUDED

- A. Provide all labor, materials, tools, field-test instruments and equipment required for the complete testing, identification and administration of the work called for in the Contract Documents.
- B. In order to conform to the overall project event schedule, the cabling contractor shall survey the work areas and coordinate cabling testing with other applicable trades.
- C. In addition to the tests detailed in this document, the contractor shall notify the Owner or the Owner's representative of any additional tests that are deemed necessary to guarantee a fully functional system. The contractor shall carry out and record any additional measurement results at no additional charge

#### 1.2 SCOPE

- A. This Section includes the minimum requirements for the test certification, identification and administration of horizontal balanced twisted pair cabling.

#### 1.3 SECTION INCLUDES:

1. Copper cabling test instruments
  2. Copper cabling testing
  3. Identification
    - a. Labels and labeling
  4. Administration
    - a. Test results documentation
    - b. As-built drawings
- B. Testing shall be carried out in accordance with this document.
  - C. Testing shall be performed on each cabling link including MPTL (modular plug terminated link). (100% testing)
  - D. All tests shall be documented.

#### 1.4 QUALITY ASSURANCE

- A. All testing procedures and field-test instruments shall comply with applicable requirements of:
  1. ANSI/TIA-1152, Requirements for Field Test Instruments and Measurements for Balanced Twisted-Pair Cabling
  2. ANSI/TIA-568-C.0, Generic Telecommunications Cabling for Customer Premises.
  3. ANSI/TIA-568-C.1, Commercial Building Telecommunications Cabling Standard

4. ANSI/TIA-568-C.2, Balanced Twisted-Pair Telecommunications Cabling and Components Standards.
  5. ANSI/TIA-606-C, Administration Standard for Commercial Telecommunications Infrastructure, including the requirements specified by the customer, unless the customer specifies their own labeling requirements.
- B. Trained technicians who have successfully attended an appropriate training program and have obtained a certificate as proof thereof shall execute the tests. These certificates may have been issued by any of the following organizations or an equivalent organization:
1. Manufacturer of the connectors or cable.
  2. Manufacturer of the test equipment used for the field certification.
  3. Training organizations (e.g., BICSI, A Telecommunications Association headquarters in Tampa, Florida).
- C. The Owner or the Owner's representative shall be invited to witness and/or review field-testing.
1. The Owner or the Owner's representative shall be notified of the start date of the testing phase five (5) business days before testing commences.
  2. The Owner or the Owner's representative will select a random sample of 5% of the installed links. The Owner or the Owner's representative shall test these randomly selected links and the results are to be stored in accordance with Part 3 of this document. The results obtained shall be compared to the data provided by the installation contractor. If more than 2% of the sample results differ in terms of the pass/fail determination, the installation contractor under supervision of the representative shall repeat 100% testing at no cost to the Owner.

#### 1.5 SUBMITTALS

- A. Manufacturers catalog sheets and specifications for the test equipment.
- B. A schedule (list) of all balanced twisted-pair copper links to be tested.
- C. Sample test reports.
- D. Certification results for all installed data cables.

#### 1.6 ACCEPTANCE OF TEST RESULTS

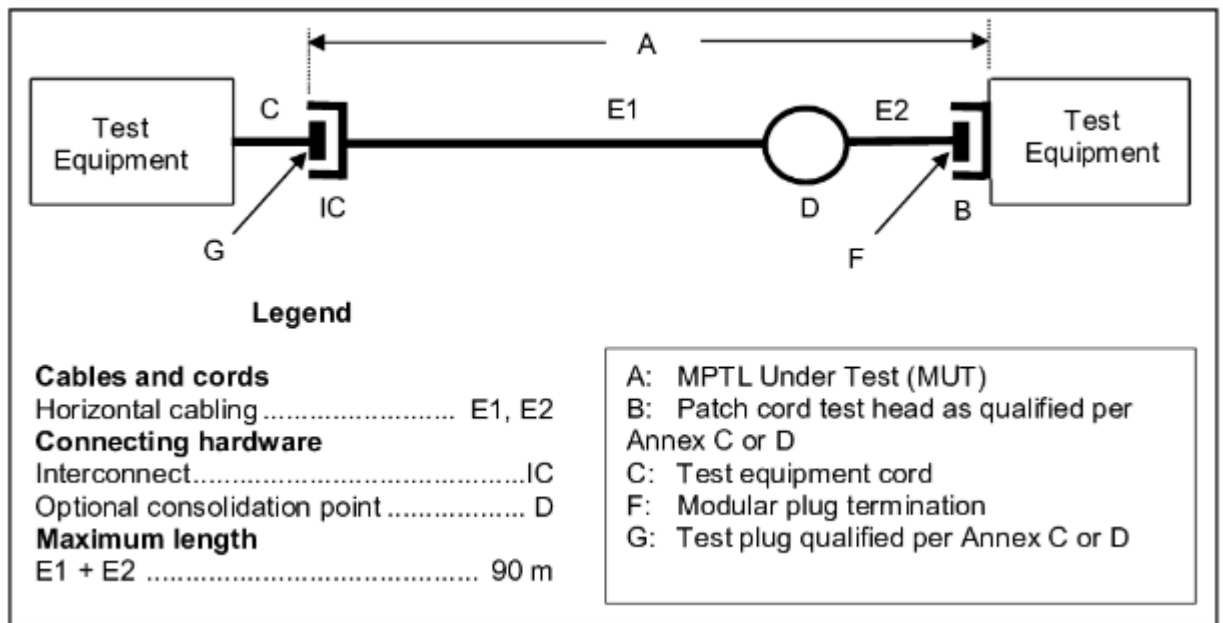
- A. Unless otherwise specified by the Owner or the Owners representative, each cabling link shall be in tested for:
1. Wire Map
  2. Length
  3. Propagation Delay
  4. Delay Skew
  5. DC Loop Resistance – recorded for information only
  6. DC Resistance Unbalance – recorded for information only
  7. Insertion Loss
  8. NEXT (Near-End Crosstalk)
  9. PS NEXT (Power Sum Near-End Crosstalk)

10. ACR-N (Attenuation to Crosstalk Ratio Near-End) – recorded for information only
11. PS ACR-N (Power Sum Attenuation to Crosstalk Ratio Near-End) – recorded for information only
12. ACR-F (Attenuation to Crosstalk Ratio Far-End)
13. PS ACR-F (Power Sum Attenuation to Crosstalk Ratio Far-End)
14. Return Loss
15. TCL (Transverse Conversion Loss) – recorded for information only
16. ELTCTL (Equal Level Transverse Conversion Transfer Loss) – recorded for information only

- B. All installed cabling Permanent Links shall be field-tested and pass the test requirements and analysis as described in Part 3. Any Permanent Link that fails these requirements shall be diagnosed and corrected. Any corrective action that must take place shall be documented and followed with a new test to prove that the corrected Permanent Link meets performance requirements. The final and passing result of the tests for all Permanent Links shall be provided in the test results documentation in accordance with Part 3.
- C. Acceptance of the test results shall be given in writing after the project is fully completed and tested in accordance with Contract Documents and to the satisfaction of the Owner.

1.7 MODULAR PLUG TERMINATED LINK (MPTL)

- A. The ANSI/TIA-568.2-D standard requires that horizontal cable be terminated on a telecommunications outlet to provide flexible access to the user. In certain limited cases there may be a need to terminate horizontal cables to a plug that is directly plugged into a device. This will sometimes be done to service a security camera, a radio enabled wireless access device, or another device which is not often moved or rearranged.



- B.
1. (A) Modular plug terminated link under test (MUT)
  2. (B) Patch cord test head qualifier per Annex C or D in ANSI/TIA-568.2-D
  3. (C) Test equipment patch cord
  4. (D) Optional consolidated point
  5. (E) Horizontal cable
  6. (F) Test plug qualified per Annex C or D in ANSI/TIA-568.2-D

- C. Modular plug terminated link transmission requirements
  - 1. Modular plug terminated link shall comply with the permanent link transmission requirements of the ANSI/TIA-568.2-D standard.

## PART 2 - PRODUCTS

### 2.1 BALANCED TWISTED-PAIR CABLE TESTERS

- A. A The field-test instrument shall be within the calibration period recommended by the manufacturer, typically 12 months.
- B. Certification tester
  - 1. Accuracy
    - a. Level IIIe accuracy in accordance with ANSI/TIA-1152
    - b. Independent verification of accuracy
  - 2. Permanent Link Adapters
    - a. RJ45 plug must meet the requirements for NEXT, FEXT and Return Loss in accordance with ANSI/TIA-568-C.2 Annex C
    - b. Twisted pair Category 5e, 6, 6A, 7 or 7<sub>A</sub> cords are not permitted as their performance degrades with use and can cause false Return Loss failures
  - 3. Results Storage
    - a. Must be capable of storing > 10,000 results for all measurements found in 2.1.B.4 below
  - 4. Measurement capabilities
    - a. Wire Map
    - b. Length
    - c. Propagation Delay
    - d. Delay Skew
    - e. DC Loop Resistance
    - f. DC Resistance Unbalance
    - g. Insertion Loss
    - h. NEXT (Near-End Crosstalk)
    - i. PS NEXT (Power Sum Near-End Crosstalk)
    - j. ACR-N (Attenuation to Crosstalk Ratio Near-End)
    - k. PS ACR-N (Power Sum Attenuation to Crosstalk Ratio Near-End)
    - l. ACR-F (Attenuation to Crosstalk Ratio Far-End)
    - m. PS ACR-F (Power Sum Attenuation to Crosstalk Ratio Far-End)
    - n. Return Loss
    - o. TCL (Transverse Conversion Loss)
    - p. ELTCTL (Equal Level Transverse Conversion Transfer Loss)
    - q. Time Domain Reflectometer
    - r. Time Domain Xtalk Analyzer
- C. PC Software

1. Windows® based.
2. Must show when 3 dB and 4 dB rules are applied
3. Re-certification capability, where results must have their Cable IDs suffixed with (RC).
4. Built in PDF export – no additional third-party software permitted.
5. Built-in statistical analysis.

## 2.2 IDENTIFICATION

- A. Labels
  - a. Refer to specification 27 0553 IDENTIFICATION FOR COMMUNICATION SYSTEMS.

## 2.3 ADMINISTRATION

- A. Administration of the documentation shall include test results of each Permanent Link.
- B. The test result information for each link shall be recorded in the memory of the field-test instrument upon completion of the test.
- C. The test result records saved within the field-test instrument shall be transferred into a Windows® -based database utility that allows for the maintenance, inspection and archiving of these test records.

## PART 3 - EXECUTION

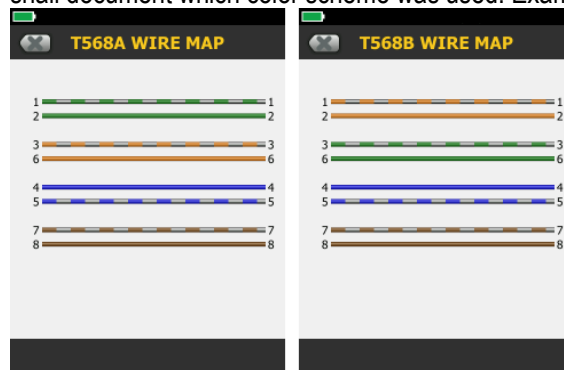
### 3.1 GENERAL

- A. All outlets, cables, patch panels and associated components shall be fully assembled and labeled prior to field-testing. Any testing performed on incomplete systems shall be redone on completion of the work.

### 3.2 BALANCED TWISTED PAIR CABLE TESTING

- A. Field-test instruments shall have the latest software and firmware installed.
- B. Permanent Link test results including the individual frequency measurements from the tester shall be recorded in the test instrument upon completion of each test for subsequent uploading to a PC in which the administrative documentation (reports) may be generated.
- C. Testing shall be performed on each cabling segment (connector to connector). Sampling is not acceptable.
- D. Permanent Link adapters made from twisted pair Category 5e, 6, 6A, 7 or 7<sub>A</sub> cords are not permitted as their performance degrades with use and can cause false Return Loss failures.
- E. The installer shall build a reference link. All components shall be anchored so it is not possible to disturb them. The technician is to conduct a Category 6 Permanent Link test each day to ensure no degradation of the tester or its Permanent Link adapters.
- F. Wire Map Measurement

1. The wire map test is intended to verify pin-to-pin termination at each end and check for installation connectivity errors. For each of the 8 conductors in the cabling, the wire map indicates:
  - a. Continuity to the remote end
  - b. Shorts between any two or more conductors
  - c. Reversed pairs
  - d. Split pairs
  - e. Transposed pairs
  - f. Distance to open on shield
  - g. Any other miss-wiring
  
2. The correct connectivity of telecommunications outlets/connectors is defined in ANSI/TIA-568-C.2. Two color schemes are permitted. The user shall define which scheme is to be used. The field tester shall document which color scheme was used. Examples are given below:



- 3.
- G. Length Measurement
1. The length of each balanced twisted pair shall be recorded.
  2. Since physical length is determined from electrical length, the physical length of the link calculated using the pair with the shortest electrical delay shall be reported and used for making the pass or fail determination.
  3. The pass or fail criteria is based on the maximum length allowed for the Permanent Link as specified in ANSI/TIA-568-C.2 plus the nominal velocity of propagation (NVP) uncertainty of 10%. For a Permanent Link, the length measurement can be 325 ft. (99 m) before a fail is reported.
- H. Propagation Delay measurement
1. Is the time it takes for a signal to reach the end of the link.
  2. The measurement shall be made at 10 MHz per ANSI/TIA-1152.
  3. The propagation delay of each balanced twisted pair shall be recorded.
  4. Is not to exceed 498 ns per ANSI/TIA-568-C.2 Section 6.3.18.
- I. Delay Skew measurement
1. Is the difference in propagation delay @ 10 MHz between the shortest delay and the delays of the other wire pairs.
  2. The delay skew of each balanced twisted pair shall be recorded.
  3. Is not to exceed 44 ns per ANSI/TIA-568-C.2 Section 6.3.19.
- J. DC Resistance

1. Often reported as Resistance, is the loop resistance of both conductors in the pair.
2. Is not specified in ANSI/TIA-1152 but shall be recorded for all four pairs.

K. DC Resistance Unbalance

1. Often reported as Resistance Unbalance, is the difference in resistance of the two wires within the pair.
2. Is not specified in ANSI/TIA-1152 for a Permanent Link but shall be recorded for all four pairs.

L. Insertion Loss

1. Is the loss of signal strength over the cabling (in dB).
2. The frequency resolution shall be:
  - a. 1 – 31.25 MHz: 150 kHz
  - b. 31.25 – 100 MHz: 250 kHz
  - c. 100 – 250 MHz: 500 kHz
3. Worst case shall be reported for all four pairs in one direction only.
4. Reported margins found to be within the accuracy of the field tester shall be marked with an asterisk (\*).
5. Is not to exceed the Category 6 Permanent Link limits found in ANSI/TIA-568-C.2 Section 6.3.7.

M. NEXT (Near-End Crosstalk)

1. Is the difference in amplitude (in dB) between a transmitted signal and the crosstalk received on other wire pairs at the same end of the cabling.
2. The frequency resolution shall be:
  - a. 1 – 31.25 MHz: 150 kHz
  - b. 31.25 – 100 MHz: 250 kHz
  - c. 100 – 250 MHz: 500 kHz
3. Shall be measured in both directions. (12 pair to pair possible combinations)
4. Both worst case and worst margins shall be reported.
5. Is not to exceed the Category 6 Permanent Link limits found in ANSI/TIA-568-C.2 Section 6.3.8.
6. Reported margins found to be within the accuracy of the field tester shall be marked with an asterisk (\*).
7. The Time Domain Xtalk data shall be stored for any marginal or failing NEXT results.

N. PS NEXT (Power Sum Near-End Crosstalk)

1. Is the difference (in dB) between the test signal and the crosstalk from the other pairs received at the same end of the cabling.
2. The frequency resolution shall be:
  - a. 1 – 31.25 MHz: 150 kHz
  - b. 31.25 – 100 MHz: 250 kHz
  - c. 100 – 250 MHz: 500 kHz
3. Shall be measured in both directions. (8 pair possible combinations)
4. Both worst case and worst margins shall be reported.
5. Is not to exceed the Category 6 Permanent Link limits found in ANSI/TIA-568-C.2 Section 6.3.9.

6. Reported margins found to be within the accuracy of the field tester shall be marked with an asterisk (\*).
  7. The Time Domain Xtalk data shall be stored for any marginal or failing PS NEXT results.
- O. ACR-N (Attenuation Crosstalk Ratio Near-End)
1. Is a calculation of NEXT minus Insertion Loss of the disturbed pair in dB.
  2. The frequency resolution shall be:
    - a. 1 – 31.25 MHz: 150 kHz
    - b. 31.25 – 100 MHz: 250 kHz
    - c. 100 – 250 MHz: 500 kHz
  3. Shall be calculated in both directions.
  4. Is not specified in ANSI/TIA-1152 but shall be recorded for all 12 possible combinations.
- P. PS ACR-N (Power Sum Attenuation Crosstalk Ratio Near-End)
1. Is a calculation of PS NEXT minus Insertion Loss of the disturbed pair in dB.
  2. The frequency resolution shall be:
    - a. 1 – 31.25 MHz: 150 kHz
    - b. 31.25 – 100 MHz: 250 kHz
    - c. 100 – 250 MHz: 500 kHz
  3. Shall be calculated in both directions.
  4. Is not specified in ANSI/TIA-1152 but shall be recorded for all 8 possible combinations.
- Q. ACR-F (Attenuation Crosstalk Ratio Far-End)
1. Is a calculation of FEXT minus Insertion Loss of the disturbed pair in dB.
  2. The frequency resolution shall be:
    - a. 1 – 31.25 MHz: 150 kHz
    - b. 31.25 – 100 MHz: 250 kHz
    - c. 100 – 250 MHz: 500 kHz
  3. Shall be measured in both directions. (24 pair to pair possible combinations)
  4. Both worst case and worst margins shall be reported.
  5. Is not to exceed the Category 6 Permanent Link limits found in ANSI/TIA-568-C.2 Section 6.3.11.
  6. Reported margins found to be within the accuracy of the field tester shall be marked with an asterisk (\*).
- R. PS ACR-F (Power Sum Attenuation Crosstalk Ratio Far-End)
1. Is a calculation of PS FEXT minus Insertion Loss of the disturbed pair in dB.
  2. The frequency resolution shall be:
    - a. 1 – 31.25 MHz: 150 kHz
    - b. 31.25 – 100 MHz: 250 kHz
    - c. 100 – 250 MHz: 500 kHz
  3. Shall be measured in both directions. (8 pair possible combinations)
  4. Both worst case and worst margins shall be reported.
  5. Is not to exceed the Category 6 Permanent Link limits found in ANSI/TIA-568-C.2 Section 6.3.13.

6. Reported margins found to be within the accuracy of the field tester shall be marked with an asterisk (\*).

S. Return Loss

1. Is the difference (in dB) between the power of a transmitted signal and the power of the signals reflected back.
2. The frequency resolution shall be:
  - a. 1 – 31.25 MHz: 150 kHz
  - b. 31.25 – 100 MHz: 250 kHz
  - c. 100 – 250 MHz: 500 kHz
3. Shall be measured in both directions. (8 pair possible combinations)
4. Both worst case and worst margins shall be reported.
5. Shall be ignored at all frequencies where the Insertion Loss is less than 3 dB for that pair.
6. Is not to exceed the Category 6 Permanent Link limits found in ANSI/TIA-568-C.2 Section 6.3.6.
7. Reported margins found to be within the accuracy of the field tester shall be marked with an asterisk (\*).
8. The Time Domain Reflectometer data shall be stored for any marginal or failing Return Loss results.

T. TCL (Transverse Conversion Loss)

1. Is the ratio (in dB) between a differential mode signal inject at the near-end and the common-mode signal measured at the near-end on the same wire pair.
2. The frequency resolution shall be:
  - a. 1 – 31.25 MHz: 150 kHz
  - b. 31.25 – 100 MHz: 250 kHz
  - c. 100 – 250 MHz: 500 kHz
3. Shall be measured in both directions.
4. Is not specified in ANSI/TIA-1152 for a Permanent Link but shall be recorded for all 8 possible combinations.

U. ELTCTL (Equal Level Transverse Conversion Transfer Loss)

1. Is the ratio (in dB) between a differential mode signal inject at the near-end and the common-mode signal measured at the far end on the same wire pair minus the Insertion Loss of that pair.
2. The frequency resolution shall be:
  - a. 1 – 31.25 MHz: 150 kHz
  - b. 31.25 – 100 MHz: 250 kHz
  - c. 100 – 250 MHz: 500 kHz
3. Shall be measured in both directions.
4. Is not specified in ANSI/TIA-1152 for a Permanent Link but shall be recorded for all 8 possible combinations.

### 3.3 ADMINISTRATION

A. Test results documentation

1. Test results saved within the field-test instrument shall be transferred into a Windows™-based database utility that allows for the maintenance, inspection and archiving of the test records. These test records shall be uploaded to the PC unaltered, i.e., “as saved in the field-test instrument”. The file format, CSV (comma separated value), does not provide adequate protection of these records and shall not be used.
  2. The test results documentation shall be available for inspection by the Owner or the Owner’s representative during the installation period and shall be passed to the Owner’s representative within 5 working days of completion of tests on cabling served by a telecommunications room or of backbone cabling. The installer shall retain a copy to aid preparation of as-built information.
  3. The database for the complete project, including twisted-pair copper cabling links, if applicable, shall be stored and delivered on CD or DVD prior to Owner acceptance of the building. This CD or DVD shall include the software tools required to view, inspect, and print any selection of the test reports.
  4. Circuit IDs reported by the test instrument should match the specified label ID (see **Error! Reference source not found.** of this Section).
  5. The detailed test results documentation data is to be provided in an electronic database for each tested balance twisted-pair and shall contain the following information
    - a. The overall Pass/Fail evaluation of the link-under-test
    - b. The date and time the test results were saved in the memory of the tester
    - c. The identification of the customer site as specified by the end-user
    - d. The name of the test limit selected to execute the stored test results
    - e. The name of the personnel performing the test
    - f. The version of the test software and the version of the test limit database held within the test instrument
    - g. The manufacturer, model and serial number of the field-test instrument
    - h. The adapters used
    - i. The factory calibration date
    - j. Wire Map
    - k. Propagation Delay values, for all four pairs
    - l. Delay Skew values, for all four pairs
    - m. DC Resistance values, for all four pairs
    - n. DC Resistance Unbalance, values for all four pairs
    - o. Insertion Loss, worst case values for all four pairs
    - p. NEXT, worst case margin and worst case values, both directions
    - q. PS NEXT, worst case margin and worst case values, both directions
    - r. ACR-F, worst case margin and worst case values, both directions
    - s. PS ACR-F, worst case margin and worst case values, both directions
    - t. Return Loss, worst case margin and worst case values, both directions
    - u. TCL, worst case values both directions
    - v. ELTCTL, worst case values, both directions.
    - w. Time Domain Crosstalk data if the link is marginal or fails
    - x. Time Domain Reflectometer data if the link is marginal or fails
- B. Record copy and as-built drawings
1. Provide record copy drawings periodically throughout the project as requested by the Construction Manager or Owner, and at end of the project on a CD or DVD. Record copy drawings at the end of the project shall be in CAD format and include notations reflecting the as built conditions of any additions to or variation from the drawings provided such as, but not limited to cable paths and termination point. The as-built drawings shall include, but are not limited to block diagrams, frame and cable labeling, cable termination points, equipment room layouts and frame installation details. The as-builts shall include all field changes made up to construction completion:

- a. Field directed changes to pull schedule.
- b. Horizontal cable routing changes.
- c. Associated detail drawings.

**END OF SECTION 27 1700**

## SECTION 27 1800 - TESTING, ID AND ADMIN OF FIBER INFRASTRUCTURE

### PART 1 - GENERAL

#### 1.1 WORK INCLUDED

- A. Provide all labor, materials, tools, field-test instruments and equipment required for the complete testing, identification and administration of the work called for in the Contract Documents.
- B. In order to conform to the overall project event schedule, the cabling contractor shall survey the work areas and coordinate cabling testing with other applicable trades.
- C. In addition to the tests detailed in this document, the contractor shall notify the Owner or the Owner's representative of any additional tests that are deemed necessary to guarantee a fully functional system. The contractor shall carry out and record any additional measurement results at no additional charge.

#### 1.2 SCOPE

- A. This Section includes the minimum requirements for the test certification, identification and administration of backbone and horizontal optical fiber cabling.
- B. This Section includes minimum requirements for:
  - 1. Fiber optic test instruments
  - 2. Fiber optic testing
  - 3. Identification
    - a. Labels and labeling
  - 4. Administration
    - a. Test results documentation
    - b. As-built drawings
- C. Testing shall be carried out in accordance with this document. This includes testing the attenuation and polarity of the installed cable plant with an optical loss test set (OLTS) and the installed condition of the cabling system and its components with an optical time domain reflectometer (OTDR). The condition of the fiber end faces shall also be verified.
- D. Testing shall be performed on each cabling link (connector to connector).
- E. Testing shall be performed on each cabling channel (equipment to equipment) that is identified by the owner.
  - 1. Testing shall not include any active devices or passive devices within the link or channel other than cable, connectors, and splices, i.e. link attenuation does not include such devices as optical bypass switches, couplers, repeaters, or optical amplifiers.
- F. All tests shall be documented including OLTS dual wavelength attenuation measurements and OTDR traces with event tables as well as OTDR maps.

1. Optionally, documentation shall also include optical length measurements and pictures of the connector end face.

### 1.3 QUALITY ASSURANCE

- A. All testing procedures and field-test instruments shall comply with applicable requirements of:
  1. ANSI Z136.2, ANS For Safe Use Of Optical Fiber Communication Systems Utilizing Laser Diode And LED Sources
  2. ANSI/TIA-526-14-C, Optical Power Loss Measurement of Installed Multimode Fiber Cable Plant with full OTDR descriptions
  3. ANSI/TIA-526-7-A, Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant
  4. TIA-TSB-4979, Practical Considerations for Implementation of Multimode Launch Conditions in the Field
  5. ANSI/TIA-568-C.0, Generic Telecommunications Cabling for Customer Premises
  6. ANSI/TIA-568.3-D, Optical Fiber Cabling and Components Standard
  7. ANSI/TIA-606-B, Administration Standard for Commercial Telecommunications Infrastructure, including the requirements specified by the customer, unless the customer specifies their own labeling requirements
- B. Trained technicians who have successfully attended an appropriate training program, which includes testing with an OLTS and an OTDR and have obtained a certificate as proof thereof shall execute the tests. These certificates may have been issued by any of the following organizations or an equivalent organization:
  1. Manufacturer of the fiber optic cable and/or the fiber optic connectors.
  2. Manufacturer of the test equipment used for the field certification or representative.
  3. Training organization e.g. BICSI
- C. The Owner or the Owner's representative shall be invited to witness and/or review field-testing.
  1. The Owner or the Owner's representative shall be notified of the start date of the testing phase five (5) business days before testing commences.
  2. The Owner or the Owner's representative will select a random sample of 5% of the installed links. The Owner or the Owner's representative shall test these randomly selected links and the results are to be stored in accordance with Part 3 of this document. The results obtained shall be compared to the data provided by the installation contractor. If more than 2% of the sample results differ in terms of the pass/fail determination, the installation contractor under supervision of the representative shall repeat 100% testing at no cost to the Owner.

### 1.4 SUBMITTALS

- A. Manufacturers catalog sheets and specifications for fiber optic field-test instruments including optical loss test sets (OLTS; power meter and source), optical time domain reflectometer (OTDR) and video microscope.
- B. A schedule (list) of all optical fibers to be tested.
- C. Sample test reports.

1.5 ACCEPTANCE OF TEST RESULTS

A. Unless otherwise specified by the Owner or the Owners representative, each cabling link shall be in compliance with the following test limits:

1. Optical loss testing

a. Multimode and Singlemode links

1) The link attenuation shall be calculated by the following formulas as specified in ANSI/TIA-568.3-D.

a)  $\text{Link Attenuation (dB)} = \text{Cable\_Attn (dB)} + \text{Connector\_Attn (dB)} + \text{Splice\_Attn (dB)}$

b)  $\text{Cable\_Attn (dB)} = \text{Attenuation Coefficient (dB/km)} * \text{Length (Km)}$

c)  $\text{Connector\_Attn (dB)} = \text{number of connector pairs} * \text{connector loss (dB)}$

d) Maximum allowable connector loss = 0.75 dB  
*Check your application limits, you may need to reduce the allowable connector loss here*

e) Use of Reference Grade connectors in Test Reference Cords.

f) *Test Reference Cords shall use Reference Grade connectors and the mated loss budget value (first and last) for these cords for Multimode shall be 0.30 dB and for Single-Mode shall be 0.50 dB.*

g)  $\text{Splice\_Attn (dB)} = \text{number\_of\_splices} * \text{splice loss (dB)}$

h) Maximum allowable splice loss = 0.3 dB  
*Check your application limits, you may need to reduce the allowable connector loss here*

i) The values for the Attenuation Coefficient (dB/km) are listed in the table below: Your cable may perform better than this, check the datasheet from the vendor and insert values here if desired

Type of Optical Fiber	Wavelength (nm)	Attenuation coefficient (dB/km)	Wavelength (nm)	Attenuation coefficient (dB/km)
Multimode 62.5/125 μm	850	3.5	1300	1.5
Multimode 50/125 μm	850	3.0	1300	1.5
Single-mode (Inside plant)	1310	1.0	1550	1.0
Single-mode (Outside plant)	1310	0.5	1550	0.5

2. OTDR testing

a. Reflective events (connections) shall not exceed: Check your application limits, you may need to reduce the allowable connector loss/reflectance here

b. 0.75 dB in optical loss when bi-directionally averaged

c. -35 dB Reflectance for multimode connections

d. -40 dB reflectance for UPC singlemode connections

e. -55 dB reflectance for APC singlemode connections

f. Non-reflective events (splices) shall not exceed 0.3 dB.  
 Check your application limits, you may need to reduce the allowable splice loss here

1) Magnified end face inspection

- 2) Fiber connections shall be visually inspected to IEC 61300-3-35 Edition 1.0 for end face quality.
  - 3) Scratched, pitted or dirty connectors shall be diagnosed and corrected.
  - g. All installed cabling links and channels shall be field-tested and pass the test requirements and analysis as described in Part 3. Any link or channel that fails these requirements shall be diagnosed and corrected. Any corrective action that must take place shall be documented and followed with a new test to prove that the corrected link or channel meets performance requirements. The final and passing result of the tests for all links and channels shall be provided in the test results documentation in accordance with Part 3.
  - h. Acceptance of the test results shall be given in writing after the project is fully completed and tested in accordance with Contract Documents and to the satisfaction of the Owner.
  - i. Note: High Bandwidth applications such as 10GBASE-SR, FC1200, and 40GBASE-SR4 impose stringent channel loss limits. Where practical, certification should consider loss length limits that
  - j. meet maximum channel (transmitter to receiver) loss. 0.75 dB per connector pair loss may not support the intended application.
3. Performance specification for multimode fiber links at 850 nm.

1.6

Fiber Type		Band-width	10GBASE-SR		FibreChannel 1200-MX-SN-I		40GBASE-SR4	
	μm	(MHz•Km)	Length (m)	Loss (dB)	Length (m)	Loss (dB)	Length (m)	Loss (dB)
OM1	62.5	200	33	2.5	33	2.4	N/A	N/A
OM2	50	500	82	2.3	82	2.2	N/A	N/A
OM3	50	2000	300	2.6	300	2.6	100	1.9
OM4	50	4700	400	2.9	N/A	N/A	150	1.5
OM5	50	4700	400	2.9	N/A	N/A	150	1.5

PART 2 - PRODUCTS

2.1 OPTICAL FIBER CABLE TESTERS

- A. The field-test instrument shall be within the calibration period recommended by the manufacturer and a copy of the calibration certificate made available.
- B. Optical loss test set (OLTS)
  - 1. Multimode optical fiber light source
    - a. Provide dual LED light sources with central wavelengths of 850 nm (±30 nm) and 1300 nm (±20 nm). VCSEL sources are not permitted per ANSI/TIA-526-14-C.
    - b. Output power of -20 dBm minimum.
    - c. The launch shall meet the Encircled Flux launch requirements of ANSI/TIA-526-14-C.

- d. The test reference cords must demonstrate an insertion loss  $\leq 0.15$  dB when mated against each other, and this test shall be stored and delivered with the other test results.
    - 1)
  2. Singlemode optical fiber light source
    - a. Provide dual laser light sources with central wavelengths of 1310 nm ( $\pm 20$  nm) and 1550 nm ( $\pm 20$  nm).
    - b. Output power of  $-10$  dBm minimum.
    - c. The test reference cords must demonstrate an insertion loss  $\leq 0.25$  dB when mated against each other, and this test shall be stored and delivered with the other test results.
  3. Power Meter
    - a. Provide 850 nm, 1300 nm, 1310 nm, and 1550 nm wavelength test capability.
    - b. Power measurement uncertainty of  $\pm 0.25$  dB.
    - c. Store reference power measurements.
    - d. Save at least 10,000 results to internal memory.
    - e. PC interface (USB).
      - 1)
  4. Optional length measurement
    - a. It is preferable to use an OLTS that is capable of measuring the optical length of the fiber using time-of-flight techniques.
- C. Optical Time Domain Reflectometer (OTDR)
1. Shall have a bright, color LCD display with backlight.
  2. Shall have rechargeable Li-Ion battery for 8 hours of normal operation.
  3. Weight with battery and module of not more than 4.5 lb and volume of not more 200 in<sup>3</sup>.
  4. Internal non-volatile memory with capacity for storing at least 2,000 OTDR bi-directionally tested fiber links.
  5. USB port to transfer data to a PC or thumb drive/memory stick.
  6. Multimode OTDR
    - a. Wavelengths of 850 nm ( $\pm 10$  nm) and 1300 nm (+ 35 nm / - 15 nm).
    - b. Event dead zones not to exceed 0.7 m at 850 nm and 1300 nm.
    - c. Attenuation dead zones not to exceed 2.5 m at 850 nm and 4.5 m at 1300 nm.
    - d. Distance range not less than 9,000 m.
    - e. Dynamic range at least 28 dB for 850 nm and 30 dB at 1300 nm.
    - f. Allow bi-directional testing without moving the OTDR to the far end.
    - g. Perform on-board bi-directional averaging.
  7. Singlemode OTDR
    - a. Wavelengths of 1310 nm ( $\pm 25$  nm) and 1550 nm ( $\pm 30$  nm).
    - b. Event dead zones not to exceed 0.6 m at 1310 nm and 1550 nm.
    - c. Attenuation dead zones not to exceed 3.7 m at 1310 nm and 1550 nm.
    - d. Distance range not less than 80 km at 1310 nm and 130 km at 1550 nm.
    - e. Dynamic range at least 32 dB for 1310 nm and 30 dB at 1550 nm.
    - f. Allow bi-directional testing without moving the OTDR to the far end.
    - g. Perform on-board bi-directional averaging.
- D. Fiber Microscope

1. Field of view 420  $\mu\text{m}$  x 320  $\mu\text{m}$ 
  - a. Video camera systems are preferred.
  - b. Camera probe tips that permit inspection through adapters are required.
  - c. Test equipment shall be capable of saving and reporting the end face image to IEC 613003-3-35.

E. Integrated OLTS, OTDR and fiber microscope

1. Test equipment that combines into one instrument an OLTS, an OTDR and a fiber microscope may be used.

## 2.2 IDENTIFICATION

F. Labels

- a. Refer to specification 27 0553 IDENTIFICATION FOR COMMUNICATION SYSTEMS.

## 2.2 ADMINISTRATION

- A. Administration of the documentation shall include test results of each fiber link and channel.
- B. The test result information for each link shall be recorded in the memory of the field-test instrument upon completion of the test.
- C. The test result records saved within the field-test instrument shall be transferred into a Windows™-based and/or cloud-based database utility that allows for the maintenance, inspection and archiving of these test records.

## PART 3 – EXECUTION

### 3.1 GENERAL

- D. All tests performed on optical fiber cabling that use a laser or LED in a test set shall be carried out with safety precautions in accordance with ANSI Z136.2.
- E. All outlets, cables, patch panels and associated components shall be fully assembled and labeled prior to field-testing. Any testing performed on incomplete systems shall be redone on completion of the work.

### 3.2 OPTICAL FIBER CABLE TESTING

- F. Field-test instruments shall have the latest software and firmware installed.
- G. Link and channel test results from the OLTS and OTDR shall be recorded in the test instrument upon completion of each test for subsequent uploading to a PC and/or a cloud-based service in which the administrative documentation (reports) may be generated.
- H. Fiber end faces shall be inspected using a video scope with a field of view not less than 425  $\mu\text{m}$  x 320  $\mu\text{m}$ .

1. It is preferable that the end face images be recorded in the memory of the test instrument for subsequent uploading to a PC and reporting.
- I. Testing shall be performed on each cabling segment (connector to connector).
- J. Testing shall be performed on each cabling channel (equipment to equipment) that is planned for use per the owner's instructions.
- K. Testing of the cabling shall be performed using high-quality test reference cords of the same core size as the cabling under test, terminated with reference grade connectors. Reference grade connectors are defined as having a loss not exceeding 0.1 dB for multimode and 0.2 dB for singlemode. The test reference cords for OLTS testing shall be between 2 m and 5 m in length. The length of the launch and tail fibers for multimode OTDR testing shall be at a least 100 m (328 ft.). For singlemode, the length of the launch and tail fibers will depend on the link under test. As a guide, the following table can be used for determining the length of the launch and tail fibers.

Maximum Length of Link (km)		Typical Pulse Width (ns)	Minimum Launch and Tail Cord Length (m)
1310 nm	1550 nm only		
0 to 35	0 to 50	≤ 1,000	130
35 to 45	50 to 65	3,000	400
45 to 50	65 to 75	10,000	1,000
≥ 50	≥ 75	20,000	2400

- L. Optical loss testing
  1. Horizontal/Backbone link
    - a. Multimode links shall be tested in one direction at 850 nm and 1300 nm in accordance with ANSI/TIA-526-14-C, one-cord reference method, with an Encircled Flux compliant launch.
    - b. Singlemode backbone links shall be tested in one direction at 1310 nm and 1550 nm in accordance with ANSI/TIA-526-7-A, Method A.1 (One-cord reference method).
    - c. Link attenuation does not include any active devices or passive devices other than cable, connectors, and splices, i.e. link attenuation does not include such devices as optical bypass switches, couplers, repeaters, or optical amplifiers.
- M. OTDR Testing
  1. Fiber links shall be tested at these wavelengths for anomalies and to ensure uniformity of cable attenuation, connector insertion loss and reflectance.
    - a. Multimode: 850 nm and 1300 nm.
    - b. Singlemode: 1310 nm and 1550 nm.
  2. Each fiber link and channel shall be tested in both directions.
    - a. The launch and tail fibers shall remain in place for the measurement in the opposite direction – failing to do so will result in an increase in measurement uncertainty.
    - b. The use of a loop back fiber at the far end with a tail fiber at the near end on the adjacent fiber is permitted for bi-directional testing, so long as the OTDR is able to split the trace automatically into two traces for the two fibers under test.

3. A launch cable shall be installed between the OTDR and the first link connection.
4. A tail cable shall be installed after the last link connection.

N. Magnified End face Inspection

1. Fibers shall be inspected using a video scope with a minimum field of view  $425\ \mu\text{m} \times 320\ \mu\text{m}$  to IEC 61300-3-35 Edition 1.0. The following test limits shall be used:
  - a. Multimode connectors; Table 6 of IEC 61300-3-35 Edition 1.0
  - b. Singlemode field polished connectors; Table 5 of IEC 61300-3-35 Edition 1.0
  - c. Singlemode factory polished connectors; Table 3 of IEC 61300-3-35 Edition 1.0
  - d. Angled Physical Contact (APC) connectors; Table 4 of IEC 61300-3-35 Edition 1.0

O. Length Measurement

1. The length of each fiber shall be recorded.
2. It is preferable that the optical length be measured using an OLTS or OTDR.

P. Polarity Testing

1. Paired duplex fibers in multi-fiber cables shall be tested to verify polarity in accordance with Clause E.5.3 of ANSI/TIA-568.3-D. The polarity of the paired duplex fibers shall be verified using an OLTS.

3.3 IDENTIFICATION

Q. Labeling

1. Labeling shall conform to the requirements specified within ANSI/TIA-606-B or to the requirements specified by the Owner or the Owner's representative.

3.4 ADMINISTRATION

R. Test results documentation

1. Test results saved within the field-test instrument shall be transferred into a Windows™-based and/or cloud-based database utility that allows for the maintenance, inspection and archiving of the test records. These test records shall be uploaded to the PC or cloud unaltered, i.e., "as saved in the field-test instrument". The following formats do not provide adequate protection of these records and shall not be used.
  - a. Portable document format (PDF)
  - b. Word (.doc & .docx)
  - c. Comma separated values (.csv)
  - d. Excel separated values (.xls & .xlsx)
  - e. Text (.txt)
2. The test results documentation shall be available for inspection by the Owner or the Owner's representative during the installation period and shall be passed to the Owner's representative within 5 working days of completion of tests on cabling served by a telecommunications room or of backbone cabling. The installer shall retain a copy to aid preparation of as-built information.
3. The database for the complete project, including twisted-pair copper cabling links, if applicable, shall be stored and delivered in an electronic format or, preferably through a cloud-based service,

- prior to Owner acceptance of the building in the original format used by the cabling vendors' software.
4. Circuit IDs reported by the test instrument should match the specified label ID (see 3.3 of this Section).
  5. The detailed test results documentation data is to be provided in an electronic database for each tested optical fiber and shall contain the following information
    - a. The identification of the customer site as specified by the end-user.
    - b. The name of the test limit selected to execute the stored test results.
    - c. The name of the personnel performing the test.
    - d. The date and time the test results were saved in the memory of the tester.
    - e. The manufacturer, model and serial number of the field-test instrument.
    - f. The version of the test software and the version of the test limit database held within the test instrument.
    - g. The fiber identification number.
    - h. The length for each optical fiber.
    - i. The index of refraction used for length calculation when using length capable OLTS.
    - j. The backscatter coefficient of the fiber under test when using an OTDR.
    - k. Test results to include OLTS attenuation link and channel measurements at the appropriate wavelength(s) and the margin (difference between the measured attenuation and the test limit value).
    - l. Test results to include OTDR link and channel traces, event tables at the appropriate wavelength(s) and a map of the link tested.
    - m. The length for each optical fiber as calculated by the OTDR.
    - n. The overall Pass/Fail evaluation of the link-under-test for OLTS and OTDR measurements
    - o. Optional
      - 1) A picture or image of each fiber end-face
      - 2) A pass/fail status of the end-face using IEC 61300-3-35 Edition 1.0
- S. Record copy and as-built drawings
1. Provide record copy drawings periodically throughout the project as requested by the Construction Manager or Owner, and at end of the project on CD/DVD. Record copy drawings at the end of the project shall be in CAD format and include notations reflecting the as built conditions of any additions to or variation from the drawings provided such as, but not limited to cable paths and termination point. CAD drawings are to incorporate test data imported from the test instruments.
  2. The as-built drawings shall include, but are not limited to block diagrams, frame and cable labeling, cable termination points, equipment room layouts and frame installation details. The as-built shall include all field changes made up to construction completion:
    - a. Field directed changes to pull schedule.
    - b. Field directed changes to cross connect and patching schedule.
    - c. Horizontal cable routing changes.
    - d. Backbone cable routing or location changes.
    - e. Associated detail drawings.

**END OF SECTION 27 1800**

IP ADDRESS REQUEST FORM

Request Date:

Install Deadline:

Company:

Contact Name:

Contact Phone:

Contact Email:

Building/Location:

Project Number:

**Request Type (SELECT ONE – USE SEPARATE FORM FOR EACH REQUEST)**

- Connection / Configure Existing Data Drop
  
- New Data Cable Installation
  
- VPN / Remote Access

**Connect / Configure Existing Data Drop:**

Purpose / Description for Connected Device (Lighting Control, AV Equipment, Electrical Equipment, Printer, Etc.):

\_\_\_\_\_

Number of Devices or Switch Ports Required: \_\_\_\_\_

Number of Ports That Require Poe: \_\_\_\_\_

Device Location / Room #: \_\_\_\_\_

Data Drop ID: \_\_\_\_\_

Does the Device Require A Static IP Address?  YES  NO

**Add New Data Cable:**

Purpose / Description for New Data Cable:

\_\_\_\_\_

Number of Data Cables to Add: \_\_\_\_\_

Number of Ports Requiring Poe: \_\_\_\_\_

Device Location / Room #: \_\_\_\_\_

Does the Device Require A Static IP Address?  YES  NO

**VPN / Remote Access:**

Purpose / Description for Connected Device:

---

Server Name or Equipment IP Address That Requires Remote Access:

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Your Company's Public IP Address That You Will Be Connecting From: \_\_\_\_\_

**Signatures**

Requester Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Owner Authorization Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## SECTION 27 4116 – INTEGRATED AUDIO VIDEO SYSTEMS AND EQUIPMENT

### PART 1 - GENERAL

#### 1.1 SUMMARY OF WORK

- A. Work includes the following, as described in this Specification document, associated project drawings and any subsequent addenda:
1. Existing technology demolition work
  2. Provision of professional systems engineering and programming services.
  3. Provision of accurate and timely project management, including, but not limited to:
    - a. Implementation scheduling
    - b. Coordination with Owner, Construction Manager, Technology Consultant and other trades
    - c. Problem identification and resolution
    - d. Installation coordination at site(s)
    - e. Configuration and programming coordination
    - f. Coordination of testing
    - g. Coordination of Owner orientation
    - h. Assembly and delivery of project documentation
    - i. Accurate and timely delivery of administrative documentation
      - 1) Project schedules
      - 2) Project status reports
      - 3) Pay applications
      - 4) Other as requested
  4. Receipt and storage of all equipment on behalf of the Owner.
  5. Transportation of all equipment to designated locations.
  6. Provision of complete and fully functional audio video systems.
  7. Provision of complete trash removal and recycling services.
  8. Provision of complete project documentation.
  9. Provision of product orientation services.

#### 1.2 RELATED DOCUMENTS

- A. Project drawings

#### 1.3 STANDARDS & GUIDELINES

1. Audiovisual design and installation practices shall comply with the following standards issued by AVIXA (Audiovisual and Integrated Experience Association) and ANSI/INFOCOMM
2. INFOCOMM 2014 - AV/IT Infrastructure Guidelines for Higher Education.
3. AVIXA A102.01:2017 - Audio Coverage Uniformity in Listener Areas.
4. AVIXA F501.01:2015 - Cable Labeling for Audiovisual Systems.
5. AVIXA V202.01:2016 - Display Image Size for 2D Content in Audiovisual Systems.
6. ANSI-J-STD-710 - 2015 - Audio, Video and Control Architectural Drawing Symbols

7. ANSI/INFOCOMM 2M-2010 - Standard Guide for Audiovisual Systems Design and Coordination processes.
8. ANSI/INFOCOMM 3M-2011 - Projected Image System Contrast Ratio
9. ANSI/INFOCOMM 4:2012 - Audiovisual Systems Energy Management.
10. ANSI/INFOCOMM 10:2013 - Audiovisual Systems Performance Verifications.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: Submit applicable product information sheets for all products. Information sheets that include details for multiple model numbers, Contractor shall circle, or otherwise highlight, the applicable model number, color, other defining characteristic for the product being supplied.
1. Video display equipment (electronics, mounts and screens)
  2. Enclosures/furniture (racks, enclosures, podiums)
  3. Control system equipment (processors/user interfaces)
  4. Audio system (amplifiers, mixers, speakers, microphones, antennas)
  5. AV signal routing equipment (switchers, distribution amplifiers, transmitters, receivers)
  6. I/O connection interface equipment (wallplate and floor box hardware)
  7. Ethernet equipment (AV related)
  8. Video conference equipment (codec, camera, interfacing)
  9. Source equipment (AV sources)
  10. All cabling & termination hardware
- B. Installer Certifications: Submit manufacturer training certifications for installers.
1. Q-SYS Level One
  2. Q-SYS Control 101
  3. Q-SYS Control & UCI Training
  4. AVIXA CTS
- C. Operation and Maintenance Data.
1. Not applicable
- D. Warranty: Submit manufacturer's standard warranty statement. Submit Contractor statement of project warranty.

#### 1.5 APPROVED PRODUCTS

- A. Certain products, detailed in the project drawings, are specified by manufacturer and model number. These products shall be included in base bid proposals. Voluntary alternates shall be considered but are to be submitted as a separate proposal (i.e. -not as part of base bid submittal). Alternate solutions will not be pre-evaluated or pre-approved.
- B. Audio Video system-type designation symbols are defined on technology floorplans and detail sheets of the project drawings. Audio Video systems are designated as system types. System types are designated as AV[#]. Each AV System Type has a detailed riser diagram, included in the project drawings of this bid package, which indicates required major hardware and cabling for the system. Detailed manufacturer and part number is detailed on a AV System Product Key. Refer to project drawings.

1.6 AUDIO VIDEO SYSTEM DEFINITION & DETAIL

- A. Project drawings include detail to indicate intended device locations and intended signal flow/functionality.
- B. Contractor is responsible for including any/all devices, cables, adapters and accessories to provide complete and functional systems. Project drawings include riser diagrams, notes and details to indicate the intended signal flow and overall functionality. The Contractor shall supply all needed parts for functional systems, regardless of whether all parts are indicated on project drawings.

1.7 OVERALL PROJECT OVERVIEW

- A. This project consists of demolition of existing AV systems and the installation of new AV systems in auditorium, community room, and corridor spaces. Detailed demolition and new technology floorplans are provided as part of the project drawings. Unless otherwise noted, the Contractor shall provide all technology hardware.

1.8 QUALITY ASSURANCE:

- A. Manufacturer Qualifications: Minimum 5 years' experience in manufacture of similar products in use in similar environments, including project size, and complexity, and with the production capacity to meet the construction and installation schedule.
- B. Installer Qualifications: Installation, disassembly, re-assembly and calibration shall be done by manufacturer-trained and certified installation technicians. Assigned site Project Manager (Site Foreman) shall have a minimum of 5 years' experience managing/supervising projects of similar size and complexity.

C. MATERIALS

- 1. Source Limitations: Obtain components and accessories direct from manufacturer or manufacturer-authorized distributor. Sourced product shall carry full manufacturer warranty support.
- 2. All supplied products must be new. Remanufactured or refurbished product shall not be utilized.
- 3. All supplied products must be new. Remanufactured or refurbished product shall not be utilized.
- 4. Electrical Components: Listed and labeled per NFPA 70, Article 100 by a testing agency acceptable to authorities having jurisdiction.

D. STANDARDS COMPLIANCE

- 1. Comply with the latest edition, revision or current guideline of each standard code (or best practice) as published by the following entities:
  - a. American Institute of Architects (AIA)
  - b. American National Standard Institute (ANSI)
  - c. American Society for Testing and Materials (ASTM)
  - d. Audiovisual and Integrated Experience Association (AVIXA)
  - e. Building Industry Consulting Service International (BICSI)
  - f. Electronics Industries Association (EIA)
  - g. Federal Communications Commission (FCC)
  - h. Federal Information Processing Standards (FIPS)
  - i. HDBaseT Alliance (HDBaseT)
  - j. Institute of Electrical and Electronics Engineers (IEEE)

- k. National Electrical Manufacturers Association (NEMA)
- l. National Fire Protection Association (NFPA)
- m. National Electrical Code (NEC)
- n. National Electrical Manufacturers Association (NEMA)
- o. National Institute of Standards and Technology (NIST)
- p. National Systems Contractors Association (NSCA)
- q. Occupational Safety and Health Administration (OSHA)
- r. Product Manufacturers within this Specification
- s. State and Local Municipality Code and Ordinances
- t. Telecommunications Industries Association (TIA)
- u. Underwriters' Laboratories (UL)

E. CURRENT VERSIONS

- 1. All products supplied shall be of the latest revision available at the time of Contract.

F. FIRMWARE

- 1. All products supplied shall have the latest firmware revision available at the time of Contract and be updated to the latest firmware revision just prior to commissioning and closeout.
- 2. Contractor shall provide and perform critical firmware updates on supplied products throughout the project warranty period. Critical updates are defined as any firmware update to correct any issue that causes the product to not function as intended resulting in a non-functional system. Non-critical firmware updates shall be postponed until just prior to commissioning and closeout.
- 3. All firmware updates shall be performed by Contractor, without charge to Owner, throughout project warranty period.

G. SOURCE CODE AND CUSTOM PROGRAMMING

- 1. For systems utilizing control system source code and or custom program/configuration files, Contractor shall supply, and transfer ownership of, all programs/files to the Owner as part of project Close-out Documentation. These files shall include, but not be limited to: uncompiled and compiled source code, customized modules, login credential documentation, etc. Any/all files and information, required to alter, update or change programming, shall be supplied to the Owner.

1.9 DELIVERY, STORAGE AND HANDLING

A. Pack and ship in accordance with manufacturer's recommendations:

- 1. Finish, assemble, and test all components in the factory before shipment.
- 2. Rack components will be sub assembled before delivery to jobsite.
- 3. Deliver components to room designated for installation.

B. Do not accept damaged products at the site. Do not install damaged products.

C. Store products in heated indoor storage near point of installation. Retain protective packaging until installing. Ship to jobsite only after roughing-in, painting work, and other related finish work has been completed and installation areas are ready to accept units and recommended temperature and humidity levels will be maintained during the remainder of construction

1.10 PROJECT CONDITIONS

- A. Environmental Requirements: Do not install system until all mortar, wet and dust producing trades have completed their work and finished floor is in place.
- B. Confirm all installation locations prior to start of work.
- C. Where code permits, wiring may be run outside of conduit. Such wiring shall be coordinated either in a plenum space or by means of secondary enclosure that meets code requirements.
- D. Field Measurements: Obtain required field measurements and indicating performance setups, ceiling construction, wall construction, ventilation features, electrical systems, networks and potential obstacles on shop drawings.

1.11 WARRANTY

- A. Manufacturer's written warranty indicating manufacturer's intent to repair or replace components of system that fail in materials or workmanship from date of Substantial Completion for the number of years indicated below.
  - 1. Parts and labor project warranty shall be one (1) year, effective at date of project completion as determined by Owner sign-off of final pay application. Project warranty shall include all costs to troubleshoot and repair any/all reported problems reported during the project warranty period.

1.12 INSTALLATION

- A. Contractor shall install, calibrate and tune system for preset environments determined by customer.
- B. Contractor shall install a complete "pilot" system, to be evaluated by the Owner and Technology Consultant, prior to mass-installation of additional systems. Owner and Technology Consultant will evaluate installation methods and product configuration/programming. Once approved, Contractor may proceed with remaining system installations.
- C. Calibrate systems for proper operation.
- D. Refer to project drawings.

1.13 DEMONSTRATION

- A. Train Owner's personnel to operate and maintain systems.
- B. Include time to train owner's representative.
- C. Turn over operation and instructions to Owner.

1.14 CLOSEOUT SUBMITTALS

- A. Submittal format

1. (2) USB media for:
    - a. Owner
    - b. Technology Consultant
  - B. Maintenance data.
  - C. Inventory data (Excel spreadsheet).
    1. By Building and Room:
      - a. Each product:
        - 1) Manufacturer
        - 2) Product name
        - 3) Model number
        - 4) Serial number
        - 5) MAC address (if applicable)
        - 6) IP address (if applicable)
        - 7) Network Name (if applicable)
        - 8) Owner asset tag number (if applicable)
  - D. Software and Firmware Operational Documentation:
    1. Software operating and upgrade manuals.
    2. Program Software Backup: On USB media. This shall include non-compiled source code including any program module custom to the project. All login credentials required to open/access code and modules shall be supplied.
    3. Printout of software application and graphic screens.
  - E. Source Code and/or equipment configuration files
  - F. As-Built diagrams/drawings
  - G. Provide (2) copies of all Closeout Submittals (one to Owner and one to Technology Designer)
- 1.15 FIRESTOPPING
- A. Comply with TIA-569-D, Annex A, "Firestopping."
  - B. Comply with "Firestopping Systems" Article in BICSI's "Telecommunications Distribution Methods Manual."
- 1.16 GROUNDING
- A. Install grounding according to the "Grounding, Bonding, and Electrical Protection" chapter in BICSI's "Telecommunications Distribution Methods Manual."
  - B. Comply with TIA-607-C and NECA/BICSI-607.
  - C. Locate grounding bus bar to minimize the length of bonding conductors. Fasten to wall, allowing at least a 2-inch clearance behind the grounding bus bar. Connect grounding bus bar to suitable electrical building ground, using a minimum No. 4 AWG grounding electrode conductor.

- D. Bond metallic equipment to the grounding bus bar, using not smaller than a No. 6 AWG equipment grounding conductor.

#### 1.17 IDENTIFICATION

- A. Identify system components, wiring, and cabling complying with TIA-606-B. Comply with requirements for identification specified in Section 27 0553 "Identification for Communications Systems."
- B. Cable and Wire Identification:
  - 1. Label each cable within 4 inches of each termination and tap, where it is accessible in a cabinet or junction or outlet box, and elsewhere as indicated.
  - 2. Each wire connected to building-mounted devices is not required to be numbered at the device if wire color is consistent with associated wire connected and numbered within panel or cabinet.
  - 3. Exposed Cables and Cables in Cable Trays and Wire Troughs: Label each cable at intervals not exceeding 15 feet.
  - 4. Label each terminal strip, and screw terminal in each cabinet, rack, or panel.
    - a. Individually number wiring conductors connected to terminal strips, and identify each cable or wiring group, extended from a panel or cabinet to a building-mounted device, with the name and number of a particular device.
    - b. Label each unit and field within distribution racks and frames.
  - 5. Identification within Connector Fields in Equipment Rooms and Wiring Closets: Label each connector and each discrete unit of cable-terminating and -connecting hardware. Where similar jacks and plugs are used for both voice and data communication cabling, use a different color for jacks and plugs of each service.
- C. Labels shall be preprinted or computer-printed type, with a printing area and font color that contrast with cable jacket color but still comply with TIA-606-B requirements for the following:
  - 1. Cables use flexible vinyl or polyester that flexes as cables are bent.

#### 1.18 FIELD QUALITY CONTROL

- A. Tests and Inspections:
  - 1. Visually inspect jacket materials for NRTL certification markings. Inspect cabling terminations in communications equipment rooms for compliance with color-coding for pin assignments, and inspect cabling connections for compliance with TIA-568.1-D.
  - 2. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.
  - 3. Test twisted pair cabling for DC loop resistance, shorts, opens, intermittent faults, and polarity between conductors. Test operation of shorting bars in connection blocks. Test cables after termination but not cross-connection.
  - 4. All CAT6 cables shall be certified in accordance with specification 27 1700 TESTING, IDENTIFICATION AND ADMINISTRATION OF BALANCED TWISTED PAIR INFRASTRUCTURE.

- B. Data for each measurement shall be documented. Data for submittals shall be printed in a summary report that is formatted similarly to Table 10.1 in BICSI's "Telecommunications Distribution Methods Manual," or shall be transferred from the instrument to the computer, saved as text files, printed, and submitted.
- C. Remove and replace cabling where test results indicate that they do not comply with specified requirements.
- D. Ensure EDID compliance between source and sink devices. For systems utilizing multiple displays of disparate resolutions, an EDID documentation plan shall be created prior to installation. Switchers, distribution amplifiers, and/or other distribution hardware that are intermediary between source and sink, shall be properly configured to maintain proper EDID per industry best-practice.
- E. Ensure HDCP compliance between source and sink devices. Switchers, distribution amplifiers, and/or other distribution hardware that are intermediary between source and sink, shall be properly configured to maintain proper HDCP key "handshake" per industry best-practice.
- F. End-to-end cabling will be considered defective if it does not pass tests and inspections.
- G. Prepare test and inspection reports.

**END OF SECTION 27 4116**